

ITEMS OF INTEREST.

VOL. VII. PHILADELPHIA, NOVEMBER, 1885. No. 11.

Shorts from the Profession.

PROCEEDINGS OF THE PENNSYLVANIA DENTAL SOCIETY.

REPORTED FOR THE "ITEMS" BY WM. H. TRUEMAN, D.D.S., PHILA.

(Concluded from page 424.)

Dr. Louis Jack, of Philadelphia, explained at length his method of using the various forms of matrice he has introduced to facilitate the filling of proximal surfaces; and specially to produce "contour" work with the least waste of time and labor in introducing the gold and polishing the filling. He illustrated his remarks by the use of diagrams. We did not note anything which has not been previously published with accompanying illustrations, and as the illustrations are necessary to a proper understanding of his remarks, and of his method of using and adjusting the matrice, and forming the filling, we have not attempted to report them. In forming the cavity, Dr. Jack opens from the crown, in operating on the molar and bicuspid teeth; cutting away largely to gain ready access to the cavity of decay and to thoroughly pack the gold against the edges of the cavity when the matrice is in place. He forms well defined dovetails on each side so as to securely hold the filling. When the cavity is ready for filling a horizontal or cross section closely resembles a horse-shoe in shape, or perhaps more nearly the capital letter G.

Dr. Guilford disapproved of this; contending that, by so shaping the cavity, the sides are unnecessarily weakened, and liable to break away; and also, that it brings a much larger surface of the filling to the edge of the crown, where it is more exposed to the force of occlusion, which tends to tear it from its position. He prefers to cut away no more than is absolutely necessary to make the walls straight or parallel. In order to make the filling secure, he carries it farther over the crown, and makes the anchorage remote from the proximal surface where it does not weaken the tooth. A cross section of a cavity, prepared as Dr. Guilford suggests, will be somewhat V-shaped, the anchorage being made at the point of the V. This not only conserves

the strength of the tooth, but also materially lessens the strain on the filling, as a large part of the force of occlusion is received in a direct line with the axis of the tooth and tends to hold it in place rather than dislodge it.

He considered the "loop matrice" far preferable, as a rule, to those advocated by Dr. Jack. It is more readily applied, and more readily manipulated, as it does not depend on the adjoining tooth for support; and permits, he thinks, of accurate and secure adjustment.

In finishing proximal contour fillings, he first shapes the cervical margin with a thin delicate instrument, shaped like a straight gum lancet, and very sharp. After this he uses thin bladed files, some with the blade bent at a right angle, and finishes with polishing tapes.

Dr. Darby finds great satisfaction in using matrices made of steel. He takes an old clock-spring (he prefers the Seth Thomas make, on account of their excellent quality) and rolls it down in his rollers to the thickness desired. Before rolling he carefully anneals so as to make it as soft as possible to avoid injury to the rollers. Some he has quite thick, others as thin as the steel can be made. For some cases he prefers brass or phosphor bronze; these metals are readily swaged to any shape required, and on this account, in some cases, are preferable to steel. This form of matrices are easily made. The metal is cut to the required shape, one or more little ears being formed on the upper edge and bent so as to rest on the adjoining tooth to prevent the matrice slipping into the gum, they at the same time assist in holding it secure. After smoothing the edges they are bent with the pliers so as to snugly embrace the tooth and so curved as to give the filling the desired contour. He is very careful to secure a close and accurate fit at the cervical edge of the cavity, so as to leave as little finishing at this point as possible. He has discarded wooden wedges to secure them in place, on account of their liability to break when made thin, as they must be in many cases; and, he found they often worked loose, and were difficult to readjust. He uses in their place thin spring-tempered steel wedges, made to screw into a steel handle. While in the handle they are readily forced into position, and when in place the steel handle is easily unscrewed and removed. He also exhibited a neat arrangement for the same purpose, consisting of two steel wedges so arranged that by turning a nut they can be made to approach each other. After the matrice is adjusted this is placed in position, the wedges fit between the teeth and, by turning the nut, are made to hold the matrice quite firmly. If during the operation it should become loose, a slight movement of the nut readjusts it. The arrangement is quite small, and when in position does not seem to be in the way; we would judge it will prove a useful instrument. The

matrices, with the little ears to assist in holding them secure, are the suggestion of Dr. J. A. Woodward, of Philadelphia; the screw arrangement and the steel wedge, the invention of Dr. Darby.

Dr. W. B. Miller, of Altoona, exhibited a simple matrice device he had invented, that seemed quite practical and will no doubt prove useful. He has fitted a small screw with a flat head to each flange of a broad flange rubber-dam clamp. (Dr. Tees' pattern.) To this is fitted various shaped matrices made with a slotted flange to rest on the flange of the clamp. It is used as follows: The slot of the matrice is passed under the screw, and the clamp adjusted on the tooth; the matrice is now adjusted by bending, etc., being removed and replaced if necessary, when satisfactory as to shape and position, the screw is tightened, and will hold it sufficiently firm for most plastic operations. When greater firmness is desired, a fine wire is passed round the matrice and the tooth and the ends twisted together; this will hold it firm enough for all operations. It has the advantage of not depending on an adjoining tooth for support.

OFFICERS FOR THE ENSUING YEAR.

President, Dr. J. W. Rhone, Bellefonte; First Vice-President, Dr. Louis Jack, Philadelphia; Second Vice-President, Dr. J. P. Thompson, Johnstown; Recording Secretary, Dr. E. P. Kremer, Lebanon; Assistant Secretary, Dr. W. B. Miller, Altoona; Corresponding Secretary, Dr. W. H. Fundenberg, Pittsburg; Treasurer, Dr. J. C. M. Hamilton, Tyrone.

BOARD OF CENSORS:

Dr. C. J. Essig, chairman; Dr. A. Boice, secretary; Drs. C. S. Beck, Gale French, W. H. Trueman. (The latter has since resigned.)

STATE EXAMINING BOARD:

Drs. Jack and Beck were elected to succeed Drs. Gerhart and C. N. Peirce. (It is quite probable the election of these gentlemen may be questioned. There is a resolution of the Society* which provides, that "there shall be one, and only one, from the faculty of each college represented in the Society on the Board." The election of these gentlemen, depriving the Pennsylvania College of Dental Surgery of representation in the Board, was in direct violation of this, and accompanied by a scene of disorder of which no society can afford to be proud.)

Cresson was selected as the next place of meeting.

In the evening Dr. William H. Trueman read a paper on "The importance of accurate impressions in mounting pivot teeth, and other like operations."

*See Transactions of the Pennsylvania State Dental Society for 1878, page 79.

The paper reflected the Doctor's experience as a mechanical dentist, and his observations in the workroom of those who adopted that branch as their calling.

He expressed surprise that while the importance of correct impressions for all forms of artificial dentures was fully recognized, so many seemed to think an impression by which to mount a pivot tooth was a matter of trifling moment. He related that it was a common occurrence for a cast from a rudely taken impression in wax to be brought to a dental laboratory with instructions to construct on it a pivot arrangement, on which the outline of the root was but faintly shown, and that the mechanic was expected to drill the opening for the pivot with no farther guide as to its position and direction than a slight depression marking the opening to the pulp canal. If the operator placed a piece of wood in the canal before the impression was taken, he seems to think any inaccuracy in the finished work was inexcusable. He had noticed that those who worked thus carelessly, usually had but little success with pivot teeth mounted on gold, and were prone to abandon that method for others less reliable and less durable.

For the operation to be a success, the root should be fully prepared, and the pivot that is to be used in the finished piece carefully fitted in to the root, and in the position it is to occupy when the impression is taken. The impression should always be taken in plaster, so as to avoid the possibility of any unseen change taking place when the impression is taken from the mouth. In these cases he discarded the impression cup, and built the plaster in the space over the root and around the adjoining teeth with a spatula.

In this way a practically perfect impression and cast can be obtained. He called attention to the point that while an ordinary denture is fitted to a yielding surface, a pivot plate is fitted to a hard, unyielding root; hence the necessity of greater, not less, accuracy.

The fact that these fixtures are held in place with cement that will fill any little inaccuracy under the plate, does not lessen the importance of a good fit. Unless the cement is amalgam, the permanency of the operation, and its cleanliness, depends on the plate fitting closely all round the edges, so as to protect the cement from wear or disintegration. The same accuracy in the model is called for in bridge work, in the so-called Richmond crowns, and other methods of replacing lost teeth; or repairing the ravages of decay by other methods than by filling.

He thought the extra time required to obtain a good cast well spent; it is all returned by the time saved when the fixture is inserted in the mouth, while the satisfaction of a good piece of work well done continues an interest on the investment as long as the work lasts.

He thought dentists, who do not do their own mechanical work, did not appreciate the extra labor, and constant annoyance an imperfect mode makes in the laboratory ; neither did they realize that it is absolutely impossible to construct a well-fitting piece of work on a defective cast.

Dr. Magill, of Erie, read a paper on "The Law of 1876, with Supplements," in which he called attention to the difficulty of so framing a law that the objects desired can be at once accomplished. The law of 1876 was the best that could then be obtained, though defective in many points. The supplements were intended to remedy this, but had failed to do so. It was difficult to define under the law what really constituted a proper qualification of the practice of dentistry ; he could see no way out of it but to fall in line with other States and require a diploma from a recognized dental college in all cases. He did not consider the law a failure, neither did he consider the time and labor which had been spent on it lost. The profession had been gaining experience in a new field, and a public sentiment had been growing in the community that he had no doubt would in time enable us to accomplish all we desire. Reforms that work well move slowly, but they move sure.

The reading of the paper was followed by a general discussion on the subject of dental law, and ended in the presentation and adoption of a resolution instructing the committee on Legislative Action to endeavor to have the law of this State amended so that a diploma from a Dental College shall be required in all cases as a pre-requisite to practice.

The Committee on Enforcement of the Dental Law made their report. There has been no case before them during the past year. Several cases have been reported, but they had learned from experience to take no action unless they were sure reliable evidence could be secured ; they found this very difficult to obtain. They had to depend on those living in the immediate neighborhood of the delinquent to secure this ; and while many were ready to make complaint to the committee, they were not so ready when asked to secure evidence on which the committee could work. The courts require facts, and pay no attention to "hear-say ;" and these facts were far more difficult to obtain than those who had no experience in the matter would suppose.

WEDNESDAY MORNING, July 30.

Dr. C. S. Beck, of Wilkesbarre, spoke at length on "Treatment of Children's Teeth ;" the following is a resume of his remarks :

The question has been often asked—At what age should children be brought to the dental office for examination ? He usually answered it by saying about the third or fourth year. By early attention, not

only is the child saved a great deal of suffering, and the probability of a good and regular denture increased, but by judicious management on the part of the dentist the natural timidity of the child in the dental chair is overcome ; the good effects of this may last through life. He desired to impress most earnestly the importance of always being truthful. The most important point in managing children is to secure their confidence. To this end he always selected the most simple cavities for filling during the first visit ; those he was sure would give the least pain and discomfort. While he endeavored to clean and excavate as perfectly as the case demanded, if there was any degree of sensitiveness he preferred, if necessary, to allow a little of the disintegrated dentine to remain rather than, by attempting to thoroughly prepare the cavity, to give the child that "intense horror" of dental operations so many patients possess, and which in many cases may be traced to the injudicious manner in which the first dentistry they had submitted to was performed. He preferred to do the best he could at the time to preserve the teeth till the child is older and better able to bear and to appreciate the importance of the operations.

He preferred to treat abscess of the temporary teeth rather than to bridge over the pulp chamber and drill a vent ; there was something very repugnant to him in the latter operation. After cleaning the pulp chamber and canals as well as he was able, he used a weak solution of corrosive sublimate, two grains to the ounce of water ; using it quite freely by working it in with a lock of cotton, or a roll of bibulous paper, or by means of the syringe. He used this on account of its potency in destroying bacteria, and has had the happiest results from its use. In other cases, he filled the pulp chamber, by means of the syringe, with warm water, and then applied pure carbolic acid by means of rolls of bibulous paper or cotton, and endeavored to make it reach thoroughly to all parts of the pulp chamber and canals, and to pass through the fistulous opening if one existed. By these means he thoroughly washed the parts and rendered them clean and sweet.

Where there was a fungus growth at the mouth of the fistula, he cut that off with the scissors, and immediately applied carbolic acid, full strength. He did not expect by these means to cure abscess, but he did make them far less painful and more comfortable.

When the tooth was ready to fill, he used gutta-percha in the pulp chamber, preferring the "base plate" variety. Sometimes he dipped it to chloroform just before passing it to the cavity, the outer surface being softened it seemed to make a more perfect filling. He did not attempt to fill the canals ; they are usually so minute in the molars he allowed them to take care of themselves, while the larger canals, of the anterior teeth, suggested caution lest the filling be forced through the foramina.

He constantly endeavored to make the visits of his little patients as pleasant as possible. He felt that by doing so he was not only conferring on them a present benefit, but was laying a foundation for a confidence in, and appreciation of, dental operations that would last as long as they lived.

Dr. Templeton, of Pittsburg, read a paper entitled "Too little of a good thing." The real subject was "Education."

The new President, Dr. J. W. Rhone, appointed the following committees:

EXECUTIVE COMMITTEE:

Drs. W. B. Miller, C. S. Beck, C. J. Essig, W. H. Fundenberg, M. B. Lowrie.

PUBLICATION COMMITTEE:

Drs. W. H. Trueman, W. B. Miller, E. P. Kremer, C. H. Peirce, E. T. Darby, S. H. Guilford.

ENFORCEMENT OF DENTAL LAWS:

Drs. W. H. Magill, G. L. Robb, Jos. R. C. Ward.

COMMITTEE ON LEGISLATIVE ACTION:

Drs. G. N. Peirce, H. Gerhart, J. A. Todd, W. E. Magill, G. W. Klump.

Adjourned to meet at Cresson, the last Tuesday of July, 1886.

Editor ITEMS:—Allow me to suggest to you, a cone bur, both for rightangle and handpiece, to be perfectly smooth on the end and slightly rounded at the acute edge, for the purpose of cutting out the marginal portions of crown cavities without impinging on the decomposed dentine over the pulp, also, for the same purpose after a cap of oxi-chloride or phosphate of zinc has been introduced in the cavity. Hope you catch my idea.

L. P. ANDERSON.

ST. MARY'S, Ga., Sept. 14th, 1885.

Will some one give me a sure and immediate cure for "odontalgia;" something that will act as a specific? Also, a good prescription for healing and hardening the gums after extraction, and a nice, astringent mouth wash?

SEATTLE, W. T., October 2.

A SUBSCRIBER.

I like your "ITEMS" more and more. I like your hit on verbosity, for I don't like a diarrhoea of words and a costiveness of thought going together.

FENTON, Mich., September 28.

H. F. DOUGLAS.

FEMALE DENTISTS. *

EDITORIAL IN "BRITISH JOURNAL OF DENTAL SCIENCE."

There is a feeling somewhat general, that remunerative occupation has to be sought by women. As year by year the population increases in our large towns, the necessity for women to seek such work becomes more urgent, and attempt is made to find an opening for female talent and enterprise. When the reign of necessity commences sentimental objections and old world theories as to the eternal fitness of things are rudely cast aside. The avalanche of women seeking employment sweeps before it custom, and some would say, those traits of character which have always been held to constitute woman's chief charm—modesty of demeanor, and an inclination to adopt a retired and home life, rather than the turmoil of office routine or professional work. Dentists have long been accustomed to review in their minds the possibility of women adopting dentistry as their life pursuit; indeed it is well known that many of the fairer sex have already graced by their presence the dental office and workshop. Many have thought that as practitioners among children and their own sex, these ladies would occupy a position at once honorable and useful. It must, however, appear open to question whether the infantile mind would consent to part with its grinders with more alacrity when the operation of extraction is performed by one of the softer sex. Women, at least according to the old-world theories, have been held to make better assistants than principals. In America, this theory is turned to practical account by several leading dentists who employ in their office ladies to minister to such suffering daughters of humanity as habitually there resort. The tact, the good temper, the quiet sympathetic ways of a woman adapt her admirably for such a post.

To us it would appear likely that in England, lady dentists will prove a development only of the far distant future, if at all. On the other hand, the employment of ladies in less ambitious, certainly not less useful capacity, of office assistants might very well become more general and more openly recognized. In this capacity they would very soon show themselves, we think, a most desirable addition to reception rooms, if not to work-shops. Their presence would relieve the dentist from many not altogether unfounded fears he may entertain about his reputation in his dealing with hysterical patients. The comfort to lady patients would certainly not be slight were they to know one of their own sex was in the room and close at hand during the administration of anaesthetics; and again, a woman by the countless acts and touches of refinement which cling about her would rob the dentist's lair of much of the ogreish atmosphere which unhappily still exists in

* Would not *lady* dentists be a more *gentlemanly* phrase? Of course we attribute to our respected contemporary no intentional disrespect.—Ed. ITEMS.

the abode of many practitioners. The busy dentist seldom has time to see to the esthetic care of his premises—who more fitting than a lady secretary for this work? Such is the dream of many. Every picture has an obverse. The ungallant do not hesitate to hint that however well in theory lady helps and lady secretaries may prove, in practice their propinquity turns out to be a not unmixed advantage. Women have tact, but they do not always display it; their sympathy does not always lavish itself on the right subject, and the ideal of the tidy woman does not in every case realize the order required by her employer. In fine, the advantages are met by a counterpoise of disadvantages, the merits by demerits, so that the old *regime*, in the minds of many, offers more hope of comfort and convenience than the new. It would be impossible, however, to settle off-hand a question of this nature and width of scope. Under many circumstances it is well to be believed that women, it may be few, it may be many, could find honorable employment among us dentists. As we have said, the circumstances must be special under which this new departure could be pursued.

REMARKS OF ITEMS OF INTEREST.

This cautious man is a reflection of the sentiments of most of the dentists of England, and of many in this country. It seems to be determined that everywhere and in every vocation specially remunerative, women must force themselves, in spite of the united opposition of "woman's protectors." In many businesses to which they are undoubtedly adapted, they are forbidden to enter, or at least prevented, by man's jealousy, selfishness, or false judgment.

There is not so much difference between the capacities of a man and a woman as is generally supposed. It is conventionality—more than adaptability—that has partitioned labor as we find it; and the conspicuous wrong is that we men have assumed to dictate the divisions of labor woman shall occupy—always reserving for ourselves the most lucrative, and often the easiest. Unless "the gentler sex" comes into *our* sphere, saying, "By your leave, Sir," and are willing, like the Gibionites, to become "hewers of wood and drawers of water," that they may be permitted even to live, they are considered "unladylike intruders," "strong-minded women," "masculine," and—and—so we go on with our ungentlemanly epithets, like small boys, calling names, because we have no arguments—hoping by such unworthy means to keep them from doing *our* work.

There are men just adapted to sell tape and measure calico; and there are women admirably adapted to superintend them—paying them proper wages, and pocketing the general profits of the business. There are men so effeminately constituted that, like Worth of Paris, they can

measure the ladies for their corsets and dresses, and get a large reputation as a dressmaker and milliner; and there are women who can come into the dental office, with so much skill and gentleness as to send the masculine occupant back to his blacksmith shop or his plow. The main thing needed to adjust men and women to the spheres of usefulness for which nature seems to design them, and thus bring about harmony, prosperity, and happiness, is to feel that every avenue of business is open to competition to all, irrespective of sex or condition, and to spend a little of our affection for women by helping them into every sphere of usefulness, profit, or skill for which they may show adaptation; and certainly dentistry is one of them.

TREATMENT OF PROXIMAL SURFACES.

H. C. LONGNECKER, A.M., D.D.S., PHILADELPHIA, PA.

[Read before the Pennsylvania State Dental Society.]

It is my conviction that the operations required on the proximal surfaces are by far the most difficult, the most laborious, and, at times, the most discouraging. Not only are they difficult, but more numerous than those required on the buccal and masticating surfaces.

In the treatment of the latter class of cavities, while there may be differences of opinion as to the preparation and manner of introducing the gold, still, if thoroughness is observed, the result will be, as a rule, satisfactory. When, however, decay attacks the adjoining surfaces of the teeth, there are a number of "systems," all of which are warmly and earnestly defended.

In the treatment of proximal surfaces, operators may be divided into two general classes, those who make permanent separations, and those who restore the original form of the lost tissue. The first class may be subdivided into those who advocate the single and double V-forms of separation; those who separate widely and freely toward the palatal and slightly toward the buccal surfaces; and lastly, those who cut through for the purpose of obtaining room, leaving the contiguous walls parallel.

That form which allows the teeth to again come in contact at the necks is dangerous, for the cause of the original decay is not removed. Recurrence of decay will often take place, and the operations thus made necessary are extremely difficult to perform thoroughly and satisfactorily. That form which allows them to touch toward their buccal and grinding surfaces, while it secures freedom at the necks of the teeth if properly performed, has the objection of causing a sacrifice of tooth-structure, which hardly seems justifiable. In addition to this, the teeth are kept in immediate contact, the exciting cause of decay is not removed, and unless conditions are favorable, caries will ensue.

Cutting through from the grinding surface, leaving the walls flat

and parallel, has serious objections; yet it is probably more extensively practiced than any other method, for it facilitates operations. If it is done early in life the teeth will again come together, and that slow but potent force, capillary attraction, will be ever and anon at work producing recurrence of decay. The operator will be forced to sacrifice still more tooth-structure and refill, and, in the natural course of events, he will have a condition the same, or, if the teeth are frail and the tonicity of the system low, even worse than before. Again, the teeth thus treated are for a time almost useless for the purpose of mastication—the food wedges between them, and every act of mastication causes distress. This will continue as long as the spaces remain, or till the gum becomes, so to speak, paralyzed. Even when they do become measurably comfortable, the gum seldom presents a healthy appearance. If the dentine is exposed by cutting away the enamel, the surfaces for a time will be quite sensitive to thermal changes, and, of course, the dentine more subject to decay.

If separations of themselves will prevent caries, why not practice one or the other of these methods, before decay takes place, and thus supersede the possibility of it? If it is of any avail after the teeth are once affected, how much more would it be while the surfaces are still intact! Yet there are few who make separations of whatsoever kind to prevent disintegration on the adjoining surfaces of the teeth. In other words, anticipation, to my knowledge, is not very extensively practiced.

In speaking of the treatment of proximal surfaces, let us for the present confine ourselves to the molars and bicuspids, as these are the teeth that perform the service of mastication. It is these teeth more than any others which should be made to touch, not only for the support thus given and the comfort afforded in mastication, but for other reasons, which will be spoken of hereafter.

The first step in performing what is ordinarily known as a contour operation, is to press the teeth apart either by wooden wedges or cotton. Cotton is in many instances preferable on account of its producing less soreness, though it has the objection of not accomplishing the work so rapidly. Having gained the necessary amount of room, gutta-percha should be packed between the teeth and the whole space filled. This should remain three or four days, when the tenderness caused by the wedging process will have passed away. The gutta-percha should then be removed, the rubber-dam applied, and the cavity prepared. The cavity should, in frail teeth, be made to extend beneath the free margin of the gum; it should be opened well from the grinding surface, so that the palatal and buccal walls, when the operation is completed, shall be free; grooves should be cut in both walls, the edges carefully and smoothly prepared; and, lastly, a starting

point should be made at the cervical wall, near either the buccal or palatal groove. A starting point is preferable, because you can be more positive of a thoroughly moisture-tight joint, at this, the most vulnerable place in the whole operation. The starting point should be partially filled by a hand-instrument with No. 8 or 16 foil, cut in narrow strips, and in length from a half to one inch. The remaining of the operation can be performed with ease by the electro-magnetic mallet. The foil, to secure the best results, should not exceed No. 32, though sometimes heavier foils may be used.

The gold having been thoroughly consolidated and the shape of the tooth restored, the finishing can be accomplished by means of fine files, emery-cloth, linen tape and pumice, used in the order named. The operation should be completed before removing the rubber-dam, so as to avoid as much as possible the wounding of gum.

If the proximal surface of each tooth is filled the gold of one is made to touch the gold of the other, and decay cannot take place here, the margins are free, the force of capillary attraction is overcome, and comfort in mastication insured. I know of no method that presents so many advantages for the ultimate salvation of the teeth.

In the anterior teeth it is not so necessary to have them touch toward their cutting edges. A narrow space is, I think, preferable to the exposure of gold. To avoid this the teeth should be separated by pressure, and the cavity prepared and filled from the palatal surface. If, however, it is necessary to expose the metal to restore lost tissue, the operation should be performed with the utmost care, and finished exquisitely; the teeth should not be left angular and square, the corners should be rounded, and the whole made to present a graceful appearance.

These operations are extremely difficult, and we cannot always work to our ideal; but it is better to make bungle after bungle, trying to do something, than be propriety personified, doing nothing.

The labor, skill, expense, and time required for such operations is considerable; but while these may be, and doubtless are, practicable objections, they do not impair the correctness of the principle. They are the ideal—the very poetry of dentistry; useful and beautiful.

It may be Nature did not intend people should brush their teeth any more than for Adam to be clothed with fig leaves. It is perhaps, as natural as brushing the hair. Whatever may have been Nature's purpose, we know the act of masticating the food would sufficiently cleanse the teeth if our food was less artificial. But as we find the teeth, with the frailties common to the independent human organisms, we must resort to artificial means for their protection. The brush is the most effectual for this purpose. It can save more teeth than the dentist can.—O. A. JARVIS, M. D. S.

VULCANIZING.

JOHN G. HARPER, D.D.S., ST. LOUIS.

There seems to be less known regarding vulcanizing rubber than any other process used by the dentist. In Richardson's Mechanical Dentistry, page 359, we find the following:

"The heat should be raised gradually till the thermometer indicates the proper vulcanizing temperature, when the flame should be lowered and the heat maintained at this point till vulcanization is completed."

I made a number of experiments, all of them disproving the necessity of taking a long time to run up to 320 degrees. A half inch cube of black rubber, run up in fifteen minutes, starting with cold water. Sawed the cube through the middle and found the piece solid. The cube was invested in plaster in the middle of a flask.

I formed Bowspring rubber, as nearly as possible the shape of a cube, mounted it on the end of a wire, having a coil on the other end so that it stood upright, holding the rubber near the top of the boiler.

Put but little water in the boiler, so that the rubber would be surrounded by steam. Heated to 320°; after vulcanization, sawed the mass through the middle and found it solid.

Not being satisfied, I tried a larger mass of black rubber, that being most liable to become porous in vulcanizing. I took a large lower denture, invested it in plaster in a flask in such a manner as to be removed whole. I filled the entire space with black rubber, ran the heat up in fifteen minutes, let it stand at 320° one hour, and, after sawing from one end to the other through the middle, found the entire mass solid and thoroughly vulcanized. The experiments were made with a Hayes's Two Flask Vulcanizer, having a Coolidge Gas Regulator. I found that when the regulator turned down the gas, showing a pressure of about 85 pounds, the thermometer only registered 275°, and rose to only 285°.

On the same page in Richardson is the following:

"Where there is any considerable or unusual body of rubber, the time taken to raise the heat to that point should be extended to one hour or longer, for if the mass is heated very rapidly, porosity or sponginess of the thicker portions of the rubber will almost certainly ensue. This result would seem to be caused by the energetic evolution of sulphuretted hydrogen gas under a quick heat, the proper elimination of which is checked and the gas confined within the body of the mass by a too rapid surface induration of the rubber."

Can any one give an explanation of the above?

A Pleasant Winter Home for northern health seekers may be found by addressing H. P. Gatchkill, M. D., Marietta, Ga.

REPRODUCTION OF TISSUE BY SPONGE GRAFTING.

W. H. ATKINSON, M.D., D.D.S.

[Read before the Dental Society of the State of New York, May, 1885.]

In the whole history of surgery there is no method of so much value and so little understood and practiced as that which has been called sponge grafting. Like most of the knowledge of principles and modes of practice in our specialty, it grew out of the misfortunes of traumatic or functional lesion.

The first use made of sponge grafting, in a crude way, was by obstetricians to fill the gap of cervical fissure of the uterus, resulting from violent and tedious labor.

I remember the discussions as to what became of the sponge. In one case of a very nervous woman, then called "hysterical," it was questioned whether she did not purposely remove the sponge, though she stoutly maintained the contrary. The cases submitted to this treatment did so well that this method was kept secret among a few for years. At that time, a solution of bichloride of mercury in water, alone or with sal ammoniac, was the external remedy used for scabies (itch.)

Dr. William Woodruff, of Meadville, Pa., at the suggestion of a pupil then studying with him, wrung out a sponge in this solution, and used it in a badly torn cervix uteri following labor, which healed so kindly as to induce him to adopt it in the general treatment of these lesions.

The tediousness of the drainage method of healing large loss of tissue by fibrous tents, rubber tubes, or horse hair or other setons, to induce granulation, is greatly abridged by the use of the sponge graft in place of the tent, as the latter must be removed before the wound can be completely closed by the new growth. Efforts to assist nature in healing wounds and in reproduction of lost tissues from traumatic lesion or from functional lesion had been so various, bungling, and inhuman, that it is no wonder a mere expectant course long held dominion in the annals of surgery. From the abhorrent use in surgery of the actual cautery in the shape of boiling oil, into which the bleeding stump was plunged, red-hot irons and embers applied to bleeding wounds, and the potential cautery in the shape of the strongest alkalies and acids to arrest hemorrhage, the wait-and-watch treatment was established. The lack of any just apprehension of the process of inflammation permitted the introduction of "irrigation" and "drainage" of wounds and abscesses as helps to "granulation," as healing of suppurating tissue was then called.

Healing with first intention has always been regarded with high favor. Every method and management conducive to this form of

healing must be of the highest importance. Transplanting bits of skin and epithelial tissue led to such kindly results as to suggest the introduction of some vehicle into which the blood plasm might be received and held in place, to form a clot in the gap of the wound, to be metamorphosed into the scar tissue, taking the place of the lost substance. Many forms of animal sutures and of flesh tents were resorted to, especially fibrous tissues, in the shape of tendons.

At length sterilized tents were introduced, which were gradually extruded as the new formations progressed in the depths of the wound, and had to be cut off from time to time, till at last a mere shred remained in the pit left at the site of the former wound tract. Sterilization is now known as "Listerism," and is a great step in advance of the old filthy method of uncleanly carelessness.

The accounts of chicken's flesh and other forms of non-human animal flesh being used to fill gapes of lost tissue, may be dismissed with the verdict of "not proven."

The accounts of the use of sterilized sponge on the other side of the Atlantic led me to try the method in my own practice. The results have been so favorable as to induce me to write this paper, with the hope of having my brethren become partakers of the benefits of this simple and beneficent treatment. Take a case where a portion of the flesh has been quite removed by the bite of a dog, the cut of a knife, buzz-saw, or other free cutting instrument. It is only necessary to stanch the bleeding, and fit a bit of sterilized sponge of the size and shape of the lost flesh, and to cover it with some impervious dressing of oiled silk, sheet rubber, court plaster, gold beater's skin, husband's plaster, or such like material, over which a light support without pressure should be secured, to keep the exudate of blood pressure from escaping too freely.

When this is done in a healthy subject, we may look for union by first intention, without one drop of pus or deteriorated product of the albuminoid clot which fills the cavity, and out of which the new growth of tissue comes. Destruction of all disease germs which adhere to the dressings constitutes the sterilization, or "Listerism," which proves so conducive to healing by first intention.

A large list of germicides is at our command, which are competent to effect sterilization. The chief one, and leading the list, is a solution of bichloride of mercury, of from one in five hundred to one in a thousand parts of water.

Sponge grafts conserve the time and energy of the healing process. The former manner of determining the point at which to cease dressing was to place the finger on the new growth, and if the plasm broke short without adhering to the finger and forming a more or less tenacious rope, which broke as the finger was carried away farther and

farther, it was deemed necessary to continue stimulating dressings; but if the rugæ of the finger left their imprint on the jelly-like mass, closing the wound, it was deemed better to protect it from outward disturbance by a simple non-irritative dressing. If the plasm were so watery as not to rope at all, dressing with coagulant was advisable.

With the old training to guide us, and the present better understanding of the character and styles of the inflammatory process, we are more able to discriminate the indications of favorable and unfavorable progress of the healing.—*Independent Practitioner.*

OXY-PHOSPHATE.

E. G. BETTY, D.D.S., CINCINNATI.

[Read before the Mad River Valley Dental Society, Dayton, O., May 19, 1885.]

Under the head of "Different Materials for, and Methods of Filling Teeth," it may not be amiss to say a few words about our very good servant, oxy-phosphate of zinc.

This substance, as all are aware, is the result of a chemical union between a base and an acid; but with that part of it we will have nothing to do to-day. I am daily becoming more convinced that this material is of more service than we imagine, as it enables us to ultimately save more "aching" teeth than we could were we still dependent on the oxy-chlorides. It is my custom to fill *all* teeth with it in which the decay has been so extensive as to nearly expose the pulp, those in which it *is* exposed, and dead teeth that have undergone conservative treatment. If the decay has not exposed the pulp, the debris is thoroughly removed and the cavity filled with the phosphate mixed as dry as possible; the surplus is then removed and the filling covered with wax or paraffine, or it may be given a smooth surface by polishing with heated talc. Should the pulp be exposed, remove the decay, cover the pulp with some kind of varnish—comp. tinct. benzoin is excellent—flow over it a little of the phosphate prepared very thin, when this has hardened, trim and fill as in the first case. The main point in the use of the phosphate, if you wish to secure full service from it, is to allow the filling to remain as long as it will last, which, in very many cases, is about two years. Should it not remain so long, refill. The object of this is to give the tooth a *long rest*, the longer the better; at the end of a year and a half or two years, large operations with cohesive foil will be borne by the tooth so treated with but a slight chance of producing either death of the pulp, or recurrence of periosteal inflammation.

[In refilling with gold or alloy better not remove all the oxy-phosphate.—Ed. ITEMS.]

PULPLESS TEETH.

DR. CHARLES F. IVES.

What proportion of pulpless teeth can be honestly and intelligently treated and filled by the dentist? Of how many of the teeth coming to him can he say he has done his best, regardless of time or remuneration? This is the serious side. To illustrate:—A gentleman on his way to have the first superior molar extracted, thought better of the idea, and came to me for relief. Having received it, he volunteered the following statement: Some four years before he had put himself in the hands of a New York dentist, who found an exposed pulp in this tooth. It had a large gold filling, but the applications for destruction and treatment were made through a cavity in the posterior proximal surface. In due time the dead pulp was removed, and an attempt made to enter the root canal. The palatal root offered but little difficulty, but the buccal was more of a task. After many trials the dentist told him they were entirely closed with secondary dentine. The palatal root was dressed, and a temporary stopping inserted. From that time on the tooth was a constant source of uneasiness. Some time after, the patient went to another dentist, who drilled through the crown filling, obtaining direct access to the root. Treatment followed with but little relief, and it was finally filled with gutta-percha. This was the history when he came to me. I removed the entire filling, and enlarged the opening till I had free access to all the roots. I found the entrance to both buccal roots, and followed them till the freedom from odor convinced me there would be no more trouble. The palatal root was the seat of the whole distress. It was stubborn under treatment, and carbolic acid and iodoform left in it for a few days would lose identity. I went through the foramen with a drill made from a Donaldson bristle. A discharge of puss followed, and from that time it has continued to improve, and I hope will soon be in a condition to fill permanently. Well, what of it? Simply this. Do you honestly believe that if the dentist who destroyed the pulp had removed the crown filling and given the roots proper treatment and filled them, it would have given trouble? Could we look for success from treatment in any other way? It is such imperfect operations that send not a few to the physician with suspected neuralgia and other nervous diseases. They naturally result in the reporting of such operations in medical journals, with an editorial at the end, to the effect that "dentists should remember that the treatment of diseased tissues requires medical education."

It needs a good deal of patience and good temper to treat a refractory pulpless tooth. No operation so poorly pays. No operation draws more heavily on the nervous system, for it discourages as well as wearis, and it is at such times that the tempter draws near, and one

needs all his moral strength to say, "Get thee behind me." If we are unwilling to give our best efforts, our greatest energy to the work, to devote the time necessary, then let us believe with the physicians that extraction is the best thing, and not pity their ignorance. If, on the other hand, we strive with honesty of purpose to do the best we can, we shall prove in a high degree successful, and show our medical friends that pulpless teeth can be made respectable members of oral society, even though they are slightly crippled.—[Proceedings of N. Y. Society in *Independent Practitioner*.]

COCAINE.

Dr. Watt says; I suppose the contradictory reports in reference to the use of cocaine can be partly explained by accidental mistakes in preparing the article. Many of the most valuable fluid extracts are often found useless, because the active principle is decomposed, or destroyed in the preparation; frequently, perhaps, by using too great a heat. There is too much success with cocaine to warrant the conclusion that a little water will be found a substitute for it. As the extraction of a tooth is the most painful operation known in surgery, it is important to have the pain abated if it can be done with safety. There is evidence that there is such a thing as physiological anesthesia, and this is the goal we are to strive for; because that which is only physiological, and not pathological, is not ordinarily dangerous. The friends of Dr. Livingston identified his remains by an artificial joint in one of his arms. This had been caused, many years before, by a wounded lion crushing his arm, biting it back and forth from his shoulder to his elbow. All the time he was so composed that he could describe the surrounding circumstances, and yet firmly declares that he felt no pain during the attack. This is plainly hinted at in ordinary incidents of life, as every schoolboy knows that when he is fighting mad, a kick or a blow scarcely hurts him. Many soldiers during our civil war were severely wounded, without knowing it at the time. I dressed the hand of an Iowa soldier whose left hand had been mangled by a minnie ball, while he was loading, and as he could no longer shoot he was taken to the rear, where it was found that he had received four wounds previously, yet had continued to fight in ignorance of his mishaps. This can be explained only on the theory of physiological anesthesia. I think it possible a condition somewhat similar is sometimes obtained by using the galvanic current. I have experimented very extensively with the battery in extraction, and in many cases the operation was rendered painless, while in others the pain seemed to be increased. I have given up the battery in disgust, because I can find nothing to guide me in its use.

HARDENING PLASTER.

The *Journal du Ceramiste et du Chaufournier* describes a new method of hardening plaster of Paris ; from it the following extract is made :

In 1878 and 1880, M. J. B. Mallion, of Lyons, made a number of experiments in the hardening of plaster from Piedmont. He first tried a mixture of plaster and slackened lime ; but the result was unsatisfactory, the object remaining granular and of a dubious color. He then experimented with the magnesites simply made caustic ; his success was complete, the magnesia hardened the plaster better than lime, and the product was a pure white in color.

He used two methods. In the first he calcined the magnesites sufficiently to release the carbonic acid, and then reduced this caustic magnesite to an impalpable powder ; then mixed it in the proportions of 15 to 30 per cent with the plaster, and tempered it with water ; worked it up ; and when the object thus made was dry, he poured over it a solution containing from 20 to 30 per cent of sulphate of zinc (if the objects are small, they are steeped about an hour in the solution) ; they are then dried and polished, and the product is found perfectly hard.

In the second method, when the solution fails to penetrate properly into the object, M. Mallion tempers his mixture of plaster and magnesia directly with the sulphate of zinc solution, a little less concentrated than before, and then at once uses it for the purpose intended. The resulting mass is homogeneous, handsome to the eye, has an astonishing resistance against crushing, and only an iron point will make an impression on its surface.

The zinc solution is used on all objects that it is desirable to have remain white ; in this manner are made fine statuary, moldings of extraordinary beauty, blocks for statuary, fireplaces, columns and ornaments of all kinds. By lining the interior of the molds with plates of zinc, or better still, with glass, the product will have the polish of marble. The richest marbles can be likewise imitated by simply tinting certain portions of the mixture of plaster and magnesia and disposing them with judgment and art. For floors, it is better to replace the sulphate of zinc by a solution of iron, which will give to the compound a very beautiful color, similar to pinewood, and this can be rendered still more pronounced by rubbing it with linseed oil.

To obtain the best results with this process, two things are requisite ; the magnesia must be free from silica, and it must be calcined very regularly. For the latter purpose a gas furnace of the Siemens or Schwandorp type is the best.

The best of the magnesites for this purpose are undoubtedly those

from the Grecian Archipelago, at Afrati, Mandoudi, Lesbos, or Corinth ; it is sold for 27 francs per ton on the ground. The average analysis is as follows:

| | Afrati. | Mandoudi. |
|---------------------------------|---------|-----------|
| Carbonate of Magnesia..... | 94.50 | 97.53 |
| Lime..... | 4.15 | 0.75 |
| Silica..... | 0.75 | 0.15 |
| Water..... | 0.60 | 1.49 |
| Alumina and oxide of iron,..... | 0 | 0.08 |

The magnesia of Germany is irregular in composition and too high in price. The Italian mineral is valueless on account of the great quantity of silica contained in it. The analyses from the principal sources of supply are as follows:

| | Baldusiro. | Casalette. | Isle of Elbe. |
|--------------------------------------|------------|------------|---------------|
| Carbonate of magnesia..... | 80.75 | 86.30 | 84.49 |
| Silica..... | 18.50 | 13.25 | 12.85 |
| Peroxide of iron, alumina, lime..... | 0.75 | 0.45 | 2.80 |

These minerals are sold at from 20 to 30 francs per ton for the first two, and 33 francs per ton for the Elbe magnesia.—*Scientific American.*

Artistic Dentistry.—Dr. C. W. Spalding says: In this country and in Europe there are few dentists who combine high artistic skill— manipulative ability—with corresponding scientific attainments. There are brilliant examples however of this complete culture, and such exceptions to the prevailing rule are on the increase. It is well known that the practical has heretofore been more thoroughly cultivated in this country than the theoretical. This is, in my opinion, the surest road to the highest culture attainable. To add scientific knowledge to mechanical skill—to learn the reason for what we do—is easier and more frequently accomplished than is the reverse. In Europe the science of dentistry has been more specially cultivated than manipulative skill. Here lies the essential difference between European and American dentistry. Each is but partial culture. Yet I think it must be admitted that if either is to be preferred the practical is to be chosen. There are no doubt conditions of education and society, and certainly established usages and customs, particularly in Europe, to which we may attribute the difference that exists. There is one custom that prevails with European dentists that probably has something to do with the state of things there. I allude to the fact that large operations in gold are not as remunerative as with American practitioners, there is more uniformity in European fees, and large operations do not command correspondingly large fees, and that is probably one reason why the high degree of skill required to perform these operations well, has been exceptionally developed there.

Nothing great was ever accomplished without enthusiasm.—
EMERSON.

TAKE CARE OF THE TEETH.

BY A LADY.

Clean, sound, and perfect teeth are indispensable in such a variety of ways, that it would seem at first useless to urge a subject of such evident importance on the attention of the public. And yet, notwithstanding the rapid progress which has been made in advancing dentistry to a science, how few avail themselves of the results of all this care and research.

“ For personal comeliness, comfort, and health,” it has been truly said, “ no money is more remunerative than that given to a good dentist.” And yet, the great mass of the community continue to treat the subject with indifference, or as one of minor importance.

The form may be fashioned after “ nature’s most enchanting mold,” the cheek as delicately tinged as the sea-shell—the lips “ chiseled like Diana’s,” and “ out-blushing the ruby’s red”; but let the speech or smile betray ill-set or blackened teeth, and how quickly the illusion vanishes—how in an instant they deform and distort all the features of the “ human face divine” !

It is useless for us to deride beauty—it is a power. We have all felt its talismanic influence, and if God has endowed woman with loveliness, for her to neglect these natural charms she has received from her Creator, is to despise the giver. “ Every woman,” says one, “ owes it not only to herself, but to society, to be as beautiful and as charming as possible.”

While seeking, then, to preserve and enhance her charms, every woman of taste and refinement will understand, that the strictest cleanliness is absolutely necessary; and so, she that would escape the evil of an impure breath, as well as unsightly teeth, must pay scrupulous attention to this important feature of her personal appearance. If parents would bestow a tithe of the money they lavish so freely in adorning their children with senseless gew-gaws, in submitting them to the care of a skilful and intelligent dentist, we should not be continually pained by the sight of so many distorted—so many prematurely decayed teeth.

But dentists’ charges are so exorbitant, we often hear it urged. A great deal has been said on the subject of American extravagance; but if we mistake not, those cool, philosophical critics, who have treated of the subject have animadverted rather on the purposes for which we have so recklessly squandered our money, than on the expenditure itself. While we freely lavish fabulous sums—the price of being fashionable—of out-shining our neighbors—it is unquestionably true that all this expenditure has little to do toward contributing to intellectual cultivation—to health, or the sum of human happiness. Few persons seem to realize how much the health depends on the

proper care of the teeth; and yet, when we consider that the whole train of horrible neuralgias which rob life of all its enjoyment, may be traced often wholly to defective teeth, it seems strange that wisely, affectionate, and judicious parents should continue to treat the subject with so little consideration. If it is true, as has been stated, that in our country the national disease lies in the nerves, then whatever tends to ameliorate the wear and tear of the system, should be considered in the highest degree important. People, it is too true, have begun to follow a more enlightened hygiene in many particulars, and when the vast benefit of immunity from pain has been properly weighed, it is to be hoped parents will begin to understand that money is judiciously spent in everything which tends to build a sound physique in their children, rather than in encouraging or lavishing on them useless extravagance. Human life will thus be prolonged, and the sum of happiness greatly augmented.—*Dental Journal.*

Fermentation and Putrefaction.—Dr. Barrett says: I draw a clear line of demarkation between fermentation and putrefaction. They are separate processes, though tending to the same end; they are produced by different means, and their action is essentially different. So far as I know, putrefaction is always brought about by micro-organisms, while fermentation sometimes is not. Fermentation is a disruption of cohesion. How this occurs we know not. Putrefaction is a decay of the atoms themselves. The two processes cannot exist together. Putrefactive organisms work on nitrogenous matter, while the fermentative organisms do not.

The successful introduction of putrefactive germs in a fermentation or fermentative compound arrests that process. Instances of fermentation are making bread and beer. Putrefaction means the entire spoiling of the fermentative production. Fermentation is largely the process of converting starch into sugar, and albumen into peptone.

As I understand putrefaction, it is the rapid and constant disruption of an organic substance, through the agency of fungi. Fermentation results in the production of a new substance, not necessarily through the action of fungi. One is destructive, and the other, though destructive, is at the same time constructive.

What Imagination will Do.—Dr. Berry speaks of an operation on a physician, which he said hurt so badly he could not endure it. He must have cocaine. Not having the drug at hand, he applied water, and the result was perfectly satisfactory, the patient declaring there was no pain.

DEAD TEETH IN THE JAWS.

TRUMAN W. BROPHY, M.D. D.D.S., PROFESSOR OF DENTAL PATHOLOGY
AND SURGERY IN THE RUSH MEDICAL COLLEGE, CHICAGO.

In reply to Dr. Sexton on this subject, Dr. Brophy makes these pertinent remarks in the *Journal of the American Medical Association*.

Dr. Sexton says: "The retention in the jaws of teeth which are diseased, from death of the pulp or from caries, and have become irremediable sensitive to thermal influences, or have been deprived of adequate periosteal nourishment through calcareous formations about the roots, very frequently gives rise to nervous diseases about the head. I am convinced that these reflected nerve influences manifest themselves much oftener since dentistry has come more extensively into practice during the present generation, and greater efforts are made to retain defective teeth in the jaws."

That diseases of the teeth are often the center from which pain is reflected to the eyes, ears, and other parts, all experienced clinical observers must admit. But that these pathological conditions of the teeth, from which reflected pain has its origin, can be and are successfully treated and cured, with rare exceptions, as effectually as any other diseases, is a fact too well established to be set aside.

It is not possible to describe in this letter the methods by which the various diseases of the teeth are treated, but suffice it to say that "teeth which are diseased from death of pulp or from caries" *do not* "become irremediable sensitive to thermal influences." In proof of this statement, many thoroughly educated medical men, practicing the specialty of dental surgery, will testify.

"Teeth deprived of adequate periosteal nourishment, through calcareous formations about the roots, very frequently give rise to nervous diseases about the head." To this statement I assent, but dissent as to the remedy not mentioned but implied, *i. e.*, the removal of the teeth. If the calcareous deposits mentioned have destroyed so much of the pericementum and the alveolar process as to render the teeth very loose,—if, indeed, the teeth have lost their bony support and are retained by means of a remnant of pericementum only,—they can not, of course, be restored to permanent health and usefulness, and their removal is, therefore, indicated. Teeth in this condition "frequently give rise to nervous diseases about the head."

On the contrary, if the calcareous deposits have not destroyed the pericementum and alveolar processes to a very great extent, the condition is amenable to intelligent treatment and cure. In answer to the assertion that "Reflected nerve influences manifest themselves much oftener since dentistry has come more extensively into practice during the present generation," I would say, that with equal propriety

it might be said that reflected nerve influences manifest themselves more frequently since gynaecology has come more extensively into practice. To attribute the obvious increase of the nervous diseases during the present generation to diseases of the teeth is a statement not only "sweeping," but "overdrawn." *Much harm* is no doubt done by some of the modern appliances "for retention in the mouth of substitutes for absent teeth," and the unhealthy state of the gums and contiguous parts, established and maintained by the presence of these substitutes, unquestionably give rise in many cases to reflected pain.

When Dr. Sexton attempts to establish a *law* governing the management of diseased teeth, it must be based on more substantial grounds than those which he presents. The case related of his patient, the "medical man, who practices dentistry," and who was convinced that an inflammation of one of his ears began from the time the upper second molar of that side was treated for a diseased pulp, is simply an assumption, on the part of the patient, that the ear trouble had its origin from the diseased tooth, and the patient's diagnosis of his own case seems to have been accepted by Dr. S. as conclusive. The ear disease in this case may have emanated from the diseased tooth, but no evidence is produced to that effect. In regard to the query as to "whether it is safe practice to retain dead teeth in the jaws," I would say that thousands of people in our own country have had pulpless (not dead) teeth in their jaws many years, which are exempt from peridental disease, and which serve all the purposes for which teeth were provided. To ask whether it is safe practice to retain these, so-called, dead teeth in the jaws when they have been comfortable and useful from ten to forty years and promise to remain so through life, seems like a proposition too injudicious to need comment. While the death of the pulp results in "cutting off the source of nutrition from the dentine," it does not follow "that in a large number of instances irritation cannot be easily controlled."

Neither does the tooth become a foreign substance. The dentine and the enamel are, of course, no longer nourished after the death of the pulp, but their resisting structure renders them capable of maintaining their integrity many years after the pulp has been removed; and the pericementum will nourish the cementum and thereby retain the tooth in its alveolus in a comfortable condition. In order, however, to thus retain the tooth and prevent inflammation from supervening, the devitalized pulp must be removed, the pulp canals thoroughly disinfected and filled with a plastic material which hardens when in position. Dr. S. most clearly exhibits his imperfect knowledge of the dental operations in vogue, when he says: "Inflammation of the exposed dentine cannot surely be entirely arrested

in any case by filling the pulp cavity with any known extraneous material, and specially is handicraft wanting to even imperfectly protect the minute and often tortuous canals leading down to the apical foramina of the majority of the teeth." To arrest "inflammation of exposed dentine by filling the pulp cavity," in the opinion of Dr. S. would seem to be most desirable. How a tissue without nourishment and consequently without vitality can take on or maintain inflammation is beyond comprehension. The impervious filling which I have mentioned will close the apical foramina, together with the canal, which "in the majority of cases" is not tortuous to a degree of rendering the perfect filling of the root difficult or uncertain, and the assertion that the dental surgeon "is able only to offer a hopeful but uncertain prognosis in these cases" is contrary to well established fact. There are no diseases to which mankind is heir more scientifically cured than the diseases of the teeth in question.

Again: "The dead tissues of the dentine will sooner or later, most likely, be transmitted through the tissues of the cementum to the periosteum." Communication between the lacunæ and canaliculi of the cementum with the tubuli of the dentine is not free; indeed, it seldom exists, hence it cannot be "that through the periosteum alone the dentine may long derive some nourishment."

About 22,000,000 of teeth are annually extracted in the United States, and I regret to say this enormous loss of teeth is to no small extent caused by the indifference manifested by physicians in the anatomy, physiology, and pathology of these organs. It is a fact no one will attempt to gainsay, that hygienic measures directed toward the preservation of the deciduous set, if understood, are seldom recommended by the general practitioner to the families under his charge. The premature loss of these teeth paves the way for early lesions of the permanent set. The pain resulting from advanced caries of the deciduous teeth, owing to the difficulties encountered in controlling the patient, is not easily treated; moreover, the injurious impressions thus made on the system of the child abide through life. There is no doubt hundreds of thousands of teeth are unnecessarily extracted each year, and then drugs are given with a view of curing the patient of the disorders of digestion and other abnormal conditions which follow, and which in turn arise from imperfect mastication of food, verily for the want of teeth.

We need to know "what's the matter" in the treatment of these "nervous diseases about the head," as in all others, and apply a remedy which will bring the abnormal tissues back to health. Too often, indeed, has it happened that patients, by advice of their medical attendants, have submitted to a loss of many, and in some instances to all their teeth, in the vain endeavor to be relieved from

trigeminal neuralgia. You may ask. Why this useless loss of teeth, and all the resulting evils? Because the advice given was not wise; the etiology of the affection was not understood.

There are certain pathological conditions of the teeth which have not been mentioned in this discussion, and which give rise to reflected pain of the eyes, ears, and other parts.

Among these may be mentioned exostosis of the roots of teeth and nodules of calcific matter within the pulp canals in contact with a living pulp. The former of these conditions has been regarded incurable, the removal of the tooth with the united bony tumor being indicated. In favorable cases, however, this tumor may be excised and removed without removing the tooth. The pulp nodules or calcified deposits within the pulp chamber may be, in a large majority of cases, successfully removed without sacrificing the tooth.

No one approves more than I the removal of the causes of disease. It is no more necessary to extract a tooth at the root of which an alveolar abscess has formed than it would be to amputate a limb for the cure of an abscess of the medullary substance of its bone. Diseases of the eye sometimes requires that it be enucleated, but the honest, skilled ophthalmologist *would not* remove the eye when he *knew* he could restore it to usefulness. The spirit of the teachings of Dr. Sexton's articles is far from being progressive. Nor is this all; many assertions are not based on fact, but on erroneous impressions. Our duty to our profession and the laity is not to destroy, but to save; and while ignorance is ever working its mischief in all vocations in life, it is not just to accept the results of such work as a basis on which to found a law.

OXY-PHOSPHATE FILLING.

Dr. J. Taft says: It is common to lay a portion of the powder on a slab, place some of the liquid in its vicinity, then mix hastily and insert. But this does not give the best results. The ingredients should be placed, in proper proportions, on a slab, and thoroughly incorporated by hard pressure with a stiff spatula, taking all the time needed to make a complete mixture, as well as to consolidate it. By this mode far more compact fillings can be made. I have seen such remain good for four or five years, while the ordinary ones were much damaged by solution, or dissolving away by the fluids of the mouth. In placing it into a cavity use first the softer portion of the prepared mass, and afterward that which is harder, being careful to press it firmly against the walls of the cavity, and after insertion let the filling be finished by a careful rubbing down. When I see many using it as first mentioned, I am not surprised at their reported failures. When put in as if it were wet sand it will be dissolved out. I have found it

very serviceable in large cavities where amalgams are supposed to be necessary. The cavity should be carefully and thoroughly prepared, and every step in the progress should be taken with the utmost care. I have filled large cavities on the grinding surfaces, which I have found very satisfactory. I can recall but one case of failure, and that resulted from the tooth breaking, and not from the work giving way. I prepare a gold cap, about No. 30, of Stubbs gauge plate, making the plate usually by melting fragments from old foil. I prepare the cap so as to fit the mouth of the cavity, and on its lower side solder two or three anchors, usually in the shape of old platinum rivets. Then I fill the cavity with the oxy-phosphate, and, before it hardens, press the gold cap to its place, and hold it till the anchors are secured by the hardening of the filling. This makes a good tooth, to which there can be no objection; and it is not costly, either in time or material.

Riggs' Disease.—Dr. Morrison says: A few years ago, I obtained a set of Riggs' instruments and also spent a day with Dr. Riggs and became familiar with his methods. His treatment was wholly surgical, and consisted in a complete removal of all calculi. I don't think Dr. R. designedly amputates the edges of the processes. I am quite sure the instruments designed by Dr. R. are unequaled. I like the push motion, but increased care is then necessary to insure a complete removal of all debris from the pockets. Have seen cases where loose particles of calculus had been left which subsequently made their way through the substance of the gum. Flowers of sulphur has been recommended as an application in the pockets, and it seems to me that the recommendation deserves a trial. I have noticed that persons who use sulphur as a dentifrice are free from accumulation of salivary calculus.

Sound and well-arranged teeth cannot well be over-estimated, whether we regard them as instruments for mastication, or as ornaments to the mouth, the most interesting and important of all the features; where beauty sits on her ivory throne, where character leaves its impress, and where the heart and its affections find utterance. And yet, when we walk the streets, or enter the public hall, or drawing room, and see so many distorted mouths, from crowded or badly-arranged teeth, showing the want of early attention—or teeth with jagged edges, blackened and shattered crowns, standing as monuments of early and continued neglect, one is forced to the conclusion that comparatively few really appreciate the importance of these organs, in their relation either to personal beauty, or to a healthy condition of the body.

—W. W. ALLPORT.

Prevention is better than cure.

WATT'S METAL PLATES.

DR. L. P. HASKELL, CHICAGO.

For full lower dentures, there is nothing better, in a majority of cases, than "Watt's Metal Plates." There is, first, the advantage of *metal* in contact with the membrane; the advantage of *weight*, which is an important factor in lower dentures; the advantage of a *method* of construction, which insures a *perfect fit*; then the attachment of the teeth, with pink rubber, enables the operator to use plain teeth, for of all places to use "gum sections," the lower jaw is the most objectionable, either in securing an artistic arrangement, or a proper articulation.

My method of construction is to use pumice with the plaster, equal parts, for filling the impression and for flasking. Form a wax plate, and double the edge all round, as that gives the appearance, when finished, of a binding or rim to the plate. After casting, finish, and *spur* the surface with a graver; arrange the teeth, and proceed as with a rubber plate.—*Ohio Dental Journal*.

SILVER PLATES.

HASKELL.

In the introduction of *metal* plates into one's practice, the expense is the objection urged by patients. To obviate this, to some extent, for partial plates use fine silver alloyed with platinum. Of course, it will discolor in the presence of beans, eggs, etc., but then, it can be cleaned as readily as the silver spoon. For solder I prefer gold, which can be used of any fineness, 18 or 20. The plate had better be thicker than a gold plate, say gauge 26. It swages nicely, solders easily, finishes readily, and makes a good durable plate. If a clasp plate, I use gold for clasps, specially if any portion of it shows.

TREATMENT OF EXPOSED PULPS.

A dentist of Freeport, Indiana, attempted to fill a small proximal cavity in a central incisor with gold. Some few days after the operation the thermal change affected the tooth seriously enough to cause him to remove the filling and replace it with a phosphate. This in turn was removed, and a filling of Hill's stopping substituted, but to no effect; the tooth still troubled, and the doctor resolved on the destruction of the pulp, which he accomplished by access gained through this cavity, and applying his acid at the coronal extremity. After death of the pulp he attempted to remove it through this same cavity without enlarging the opening, which was scarcely larger than the broach itself. He simply attempted an impossibility, and punched on this semi-sensitive mass, time after time, with the result of packing the pulp into the upper half of the canal. This operation was repeatedly

followed by hemorrhage, but at the end of a month he pronounced it ready for filling, and made an engagement. The patient moved here before the day set, and fell into my hands. I mistrusted affairs were not all right, and so opened from the palatine surface and removed the pulp. What result but an alveolar abscess could we have looked for had he finished his operation? As a usual thing, when you destroy a tooth pulp, you have no serious complications; the only part interfered with to a great extent, is the pulp, which must be removed to the apex. Ordinarily, it does not become necessary to apply any medical agent, simply syringing the canal with tepid water being all that is required.

If no hemorrhage follows the removal of the pulp, you need not fear immediate filling, but in case of hemorrhage, it is safer to wait twenty-four or forty-eight hours, then syringe and fill.

In the treatment of pulpless teeth, no greater mistake has ever been made than over-treatment. This is a mistake the best of us are prone to make, and though we may use the proper remedy, success will come only with its intelligent application. Nature is one of the most powerful of all healers, and if the surroundings of a tooth are given a fair chance, after removing the cause of irritation, in a great majority of cases they will return to their physiological condition.—H. A. KNIGHT.

Irregularities.—Dr. O. A. Jarvis says: When in their normal position, the six upper front teeth lap over the corresponding six undereeth; the first bicuspids strike between the cusps of the two underebicuspids, and so on, each tooth striking two occluding, the cusps or points interlocking in regular order. But it is common to find variations from these positions. The *causes* are various. Sometimes the result of the premature extraction of the temporary teeth; more generally a lack of correspondence in size between the jaw and the teeth. This last is largely caused by the want of *development* of the jaw, caused by the want of exercise. Hereditary causes have much to do with it. The evils resulting are numerous, among which the deformity of the features is the most to be lamented. There is also interference with the movements of the lips and tongue; the effects on the voice; the greater difficulty in cleansing the teeth and the increased liability to their decay.

The treatment is complicated, tedious, unpleasant, and expensive. Yet the irregularity can be remedied in most cases. The operation should usually be deferred till most of the teeth have taken their positions,—from thirteen to eighteen years of age. To leave the regulation of badly placed teeth to a more advanced age is unwise, expensive, and uncertain in results.

THE BALTIMORE DENTAL COLLEGE AND THE NEW YORK DENTAL SOCIETY.

We should like to present the full address of Prof. Winder, dean of this college, given before the New York Society, but space forbids. Last year the society inadvertently did this college an injury, but this year atoned for it by making its record straight. We are glad to see that the high position of the college is recognized everywhere.

The stand this college has taken since its organization on *merit* as the standard for graduation is well set forth by the dean in his address before the recent session of the New York Dental Society. He says :

I have always been in favor of conferring degrees on merit, and merit alone. I could not believe in any other system. My Alma Mater, the University of Virginia, has always permitted, and still permits, any one to take the degree of A. M. in one session, provided he can pass the examination—but the one who accomplishes it rarely lives long afterward. The John Hopkins University of Baltimore, which has perhaps the highest standard of any college in the country, at its inauguration announced this principle. The President, Mr. Gilman, in his opening address, when he came to speak of the conferment of degrees, said they would not ask where a man came from ; what his name was ; who taught him ; how long he had been in pursuit of his studies ; but the simple question—What do you know ? and if he can measure up to the required standard of graduation we will crown him with his degree as he deserves.

Professor Huxley, who came all the way from England, to be present at the opening exercises of the Hopkins University, said (and I was very much impressed with his remarks) that education like everything else is progressive ; that in the past it had only been necessary to look after classes, now it was necessary to look after each individual interest ; and he used this very strong English expression—“that you had no right to handicap one man, with time, to the capacity of another.” That it is not a question of time at all, but a question of merit, that a diploma was a certificate that the holder knew so much ; not a certificate that he had attended a specified number of lectures or had been in pursuit of his studies, for a certain number of days, weeks, months, or years. That is the opinion of Professor Huxley, and no better or higher authority could be quoted.

The Dental Department of the National University at Washington, is making commendable progress to merit the support of the dental profession. We have received several testimonials of late in commendation of its course.

THE TEMPERAMENTS.

SANGUINE TEMPERAMENT.—The *form* is full and round, neither very gross nor very spare, and the *muscles* firm and elastic. The *complexion* is florid and ruddy, from the rich capillary circulation. *Arterial blood* abounds, the veins being small, the circulation active, and the *pulse* full and quick. The *bodily functions* are easily and quickly performed. Mind and body are quickly stimulated into action, and there is great endurance.

There is an intense animation and buoyancy of spirits, and in the mental sphere rapid thought, vivid imagination, and quick perception.

Subjects of this temperament are prone to congestions, inflammations, and fevers, and all diseases are inclined to take on inflammatory action.

NERVOUS TEMPERAMENT.—The *habit* is spare, the frame somewhat angular, but the *muscles* spare, and not well defined. The skin is dark, dull, earthy, or sallow, and hot and pungent to the touch. The cranium is large. The *circulation* is languid, with a preponderance of the venous system; the *pulse* variable and easily excited. The face has the lineaments of energy, and movements hasty and abrupt.

The mental powers are large, and capable of persistent exercise. The affections are violent, and the passions are usually very strong. Sensations have an intensity far in excess of the exciting cause.

The individual is subject to neuralgia, nervous diseases, spasmodic affections, and mental disorders.

LYMPHATIC TEMPERAMENT.—The *body* is heavy, the flesh full but soft; the joints and hands large, and the feet broad and flat. *Complexion* sallow or pasty; the hair light or reddish. The pulse is slow and easily compressed. The bodily functions are slow and languid. The chest and heart are inadequate in bulk to the rest of the body.

The mental processes are *slow*, though there is great firmness, and usually good judgment.

These subjects are inclined to glandular enlargements, catarrhal affections, abscesses, and dropsies. There is slight power of resistance to acute diseases, with a tendency to take on the chronic form, especially of the strumous and asthetic kinds.

BILIOUS TEMPERAMENT.—Habit spare; muscles hard-knit; tendons wiry; complexion swarthy, with a yellowish tinge; sharp features; dark and deep-set eyes. They are characterized by violence of reaction to irritation, particularly of the biliary apparatus, with disturbances of the digestive functions, dark-colored urine, and constipation. The bilious derangement engenders melancholy, ill-humor, and acrimony of temper.—*Key Notes.*

Think nothing too hard that is necessary to be done.

SETTING ARTIFICIAL CROWNS.

IN ODONTOLOGICAL SOCIETY, OF PHILADELPHIA.

Dr. E. H. Neal says: I think in the majority of cases the more readily the crown can be adapted the greater will be its usefulness. I strongly object to the great waste of tooth-bone that is made necessary by the use of many of the recent methods. For this reason I have used a great number of Logan crowns, which, after roughening the platinum pin, I attach with gutta-percha or oxyphosphate. I also use the Bonwill crown, but give preference to the "Logan," as it can be used without amalgam. In setting crowns, I do not usually trim the root down close to the margin of the gum, unless from the nature of the case the line of union between the root and crown will be very perceptible. When preparing to attach an all-gold crown, I take a cast of the corresponding tooth on the opposite side of the mouth; then after slight trimming make a metal die, and from this strike up the whole crown, which I make of foil-scrap melted and rolled out to about No. 25 of the standard gauge. These all-gold crowns I have found very useful where the root is badly broken. A platinum pin is first cemented in the root, and the crown attached to pin and root by oxyphosphate.

Dr. Register. Has anyone present had any experience in making crowns by Matteson's method?

Dr. Darby. I do not think this method is generally used, though the results obtained from it in Dr. Matteson's hands show that it is very good. The Logan crown has this advantage, that the pin is burned in the porcelain; but the pin itself seems to be too small. It would be better, also, if it were not square. A platinum pin is easily stretched away from the porcelain in setting. With regard to the best material for attaching crowns to roots, my experience with amalgam more and more disinclines me to use it for that purpose. I prefer phosphate of zinc. All the pins set with amalgam which I have observed have given way. The amalgam seemed to rot them.

President Guilford. The Matteson crown is so formed in the stamping or pressing that it needs but little fitting to the root. After the crown is placed in position, its shell is nearly filled with amalgam or phosphate of zinc, which thus also surrounds and clings to the projecting root wire. A porcelain face is then ground to fit the labial opening in the crown, and dove-tailed on both sides and the cutting edge. This is then cemented in place, completing the work. The apposing tooth does not touch the porcelain, but only the gold shell.

Dr. Tees. My principal objection to the Logan crown is the difficulty of inserting the pin in the root, when gutta-percha is used, and this I consider the best substance for the purpose. By this method the pin and tooth must be heated, and that will cause discomfort to

the patient. It is almost impossible to work oxyphosphate satisfactorily. If it is mixed very thin it will not harden well, and if very thick it will crumble. I think, with the Bonwill crowns made properly, the profession would want nothing else ; but they should not be set with amalgam. The pin which I have been using with most satisfaction is made from a piece of silver plate, No. 22, about one-sixteenth of an inch wide. I fill the root with gutta-percha, and then warm the pin and place in position. Then the crown is filled with oxyphosphate and pressed to place. When I cannot procure a Bonwill crown to suit, I use an old-fashioned pivot tooth.—*Cosmos*.

PRODUCTION THE OBJECT OF LIFE.

M. H. METCALF, D. D. S., NEW HAVEN, CONN.

The prime object of life is to produce. Stop reproduction, and the living world would soon cease to be ; hence, to reproduce, is a reason why all things are. Reproduction, therefore, being essential to existence, to maintain this apparent law, work becomes necessary.

Work and usefulness are synonymous terms. Every created thing finds its level of importance in the ratio of its usefulness ; therefore work, or use, takes first place among the virtues in the economy of life.

In whatever sphere a man is thrown, he attains importance only in proportion to his usefulness. The same rule applies to everything in the world. It is the inevitable method of nature in the conservation of forces and matter. In the lowest kingdom we see each atom with its corresponding uses brought into play by *chemical affinity*. Capillary attraction, molecular adhesion, crystallization, granulation, are terms which come under this head and all imply a certain usefulness of atomic nature.

In the vegetable kingdom, a step higher, we find the same necessity for combinations and new forms.

Here the changes are called reproduction, and the result is *life*.

Plants live, reproduce, and die.

Each plant is a chemico-vital laboratory teeming with atomic usefulness. Higher yet, we find in the animal greater intricacy of construction, more marvelous ingenuity of mechanism, and all pointing toward the one great end : reproduction.

Finally, in man, the epitome of all created things, we see love of offspring taking first place in his affections and urging him to acts of usefulness and discretion.

It seems then, that all things great and small have their use, and are in keeping with the grand scheme of the Creator.

How absurd then it seems for a petty mortal, a mere atom in

this great river of life, to turn about and strive to win against such a mighty stream,—to wish himself idle or useless,—and what a glorious opportunity for usefulness has the conscientious dentist! One of the faithful bards has written :

“ If thou wouldst rouse to life the buried nations,
Die to the selfhood, to its praises die ;
Open thy heart, for heavenly inspirations,
And speak the lowly, in despair who lie.

Heed not the crowds, around thy path who jostle
Intent alone on luxury, or gain ;
Be thou thy Master’s calm and just apostle,
Bearing the burdens of the common pain.

Then, when thy uses brighten, let the praises
Rise to Him, the great inspiring One ;
Yield Him thy life, as meekly as the daisies
That lift the morning dew-drops to the sun. ”

SAND PAPER DISKS.

DR. D. B. FREEMAN’S DEVICE FOR CUTTING AND CENTERING.

Take a piece of round, $\frac{3}{8}$ inch steel three inches long, and turn from one end the diameter of the disc you wish— $\frac{3}{4}$ inch if you please—and $\frac{1}{4}$ or $\frac{3}{8}$ inch deep, leaving the very center the size of your mandril screw.

Now turn the outer $\frac{1}{8}$ inch to a beveled cutting edge, and temper.

Fit a cork inside the cutting edge and allow to project a trifle, which acts as a spring to throw off each disc as cut.

With this inexpensive device I make from 150 to 400 absolutely perfect discs to the sheet of shellaced flint paper. I use $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ inch discs, and find the smaller size quite as indispensable in finishing labial fillings at the margin of the gums as are the larger on the proximal surfaces.

AND THE DUDE WAS SUBDUED.

“ Weally, ah, I beg your pardon, miss, if I intrude,” said a dude from Cincinnati, the other evening, on discovering a pretty girl milking a cow.

“ No intrusion, sir,” said the girl, blushing like a rose.

“ Ah, my dear damsel, cawn’t I assist you? ”

“ Certainly, sir. Just stand where the cow can see you. ”

“ Of course I will, me chawmer ; but what do you want the cow to see me foah? ”

“ She will think you’re a calf, and give down her milk faster. ”

Be such a master of your position that you can dare to maintain your convictions.

Editorial.

ALUMINUM.

We referred in October ITEMS OF INTEREST to some valuable preparations of this metal with silver—its increased hardness and fineness of grain by adding only five per cent of silver, or of its remarkable elasticity with even less, and of still other properties with more.

This alloy makes beautiful and durable table knives and forks, even eggs do not tarnish them. It is sometimes used for plates for artificial teeth. Five to ten per cent of this metal gives copper wonderful changes both in value and appearance. Much of our jewelry and many of our watch chains and even of our watch cases which pass for gold are copper alloyed with eight or ten per cent of aluminum. Latterly this alloy is used largely for statuettes, chandeliers, door trimmings and other house ornamentation.

This metal is now too expensive,—about \$7.00 a pound—to use where it is a large proportion of the alloy. When it becomes cheaper there will be made from it many articles of ornament and usefulness where lightness, malleability, and ductility are desirable, and every year better and more economical processes for its reduction from its oxides (in which it is chiefly found) are being perfected. One man in England says he can now plant his chemical apparatus, furnace and machinery by the side of a great clay bank, and make aluminum as fast as the world can use it. Perhaps this is an exaggeration, but surely when it becomes cheap enough it will rival iron in usefulness. For instance, a row boat and its oars made of this metal would be lighter than glass, and slightly alloyed would be stronger than steel.

Aluminum—the metal—is seldom found ; its oxides, in some one of its forms, are everywhere. As we have intimated, our common clay is principally alumina, the oxide of aluminum, sand is alumina and silica, feldspar one of the most abundant minerals, is an alkaline silicate of it, and the solid granite is largely composed of it—and what are the clay and the sand but rotted granite? A large proportion of feldspar and other igneous rocks are alumina.

The inexhaustible beds of alum are little else than alumina, and one of the favorable sources of aluminum. The natural paints called lakes are stained alumina. Who would suppose there was any relationship between the common sand and the precious stones? Yet the differences in their composition is so slight no chemist has been found to define them. Here this alumina is a grain of sand, there a ruby or a sapphire or an amethyst. Dig a little in certain localities, and this sand becomes harder and more gritty ; ah, this is emory. Follow

this uncrystallized bed of emory and we come to corundum the lowest variety of crystallized alumina; now look sharply and you find here and there the translucent crystals of sapphire—alumina stained with blue; and the ruby—alumina stained red and of the same family—all alumina; and slightly varying in characteristics, we see the topaz, the emerald and the amethyst. If you cannot visit a bed and pick them up, let me tell you how you can possess them in abundance. Just buy a handful of corundum, wash it thoroughly and put it under a microscope. Ah, here they are interspersed throughout your field—thousands of them—big, glistening and beautiful. Imagine they are as big as they look, and that you can handle and use them—yes, and sell them at fabulous prices, and you will seem the wealthiest man in the world.

ANOTHER SUBSTITUTE FOR RUBBER AND GUTTA PERCHA.

And now comes balata. Twenty years ago, Sir William Holmes said, "Balata was not to be rivaled either by india-rubber or gutta-percha, possessing much of the elasticity of the one and the durability of the other, without the intractability of rubber or the brittleness or friability of gutta-percha. It has been used considerably both in Europe and this country, but chiefly as a more costly variety of gutta-percha. At last it has come into general notice and demand. Of course this has stimulated enterprise, and a company has purchased several hundred thousand acres of the bullet tree found in Guiana and have commenced the gathering of the gum. The tree grows to the height of 120 feet. The bark which is incised to produce a flow of the milk is about half an inch thick. An intelligent axman will cut the bark so as not to materially injure the tree, though the natives often ruin them by their rough hacking, as are yearly destroyed so many of the trees from which is taken the milk of the india-rubber and gutta-percha. The balata milk—about three pints from each tree—is dried in trays and then cut in strips and hung up to harden.

Its strength makes it unrivaled for bands for machinery, and for all its qualities as a gum it is pronounced the best in the world. It is rather softer in a warm temperature than rubber and not so rigid in cold.

Catching's S. S. Class Book for Sunday-school teachers was noticed some time since. It is so admirably arranged that we think if those in want of such an assistant will send to the author for a sample, they will be much pleased with it.—B. H. CATCHING, Atlanta, Ga.

Great Believers is the subject of an interesting essay in *Christian Thought*, by Dr. S. C. Stockton, of Newark, N. J. Evidently he is as good a thinker and writer as dentist, and this is saying a good deal.

THE MEDICAL CONGRESS OF 1885.

Dr. Barrett, in his August *Practitioner*, justly upbraids the American Medical Association for its narrow, selfish and partisan action in preparing for the meeting in this country in 1887 of the World's Medical Congress. Its position with respect to Homeopathists, and even to Allopathists who dare consult with Homeopathists, shows extreme bigotry. But its seclusiveness is still more marked toward the dental profession. For several years some of our most prominent M. D. dentists have been bowing and scraping at the door of the august body—known as the World's Medical Congress—for recognition of dentistry as a branch of medicine. They finally succeeded, and at the meetings of the Congress in Europe, specially the last one in London, they were not only recognized but granted an independent section in their proceedings. By the American Medical Association this section on Dental Surgery is abolished on the plea that dentistry is not a branch of medicine. After all the concessions and humble services of these dental M. D.s to obtain recognition, this action of the Medical Association is "the unkindest cut of all." Among other things, Dr. Barrett says: "At the London meeting of 1881, our section played such an important part, worked in such harmony with the other sections, and contributed so largely to the distinguished success of that Congress, that we had no reason to doubt that, here in America, where dentistry has made such peculiarly rapid strides, where as a branch of medical science it was first organized, where the modern teaching of dentists as scientific men originated, here, among a people who claim pre-eminence in practical advancement, our specialty would surely be given every opportunity to benefit by this convocation of all that was great in medicine. In London there was no distinction between the various sections. In free democratic America, it was anticipated that a section that would probably number more delegates than any other would be given peculiar facilities."

May we not hope that this slap in the face may have a good effect? It certainly will have if it causes our profession to stand on its dignity and act as a distinct profession.

Dio Lewis' Nuggets are not nuggets of gold, as some would prefer, that they might spend them on their foolish and demoralizing habits, which he so scathingly condemns. They are better than gold; they are the matured advice of an intelligent, sound mind in a sound body. Let them be scattered broadcast through the land. This is a live, spicy, instructive monthly published at 69 Bible House, New York. Price \$1.00.

California Odontological Society meets Nov. 10th in San Francisco.

SILENCE IS GOLDEN.

To have readiness of utterance is a fine accomplishment; but to know when to keep silent is often still better. We were once afflicting severe pain on a patient, and we tried to sustain her by words of sympathy. "Don't talk," said she; and we have often thought of her request since. There are times when any words are so inadequate to express our feelings, or to meet the sufferings of another, that they seem hollow,—times when all speech strikes a harsh and discordant jar—occasions when silence and silent sympathy is the best language.

In another sphere silence is golden. It is when we are tempted to display the faults, frailties and imperfections of others. The best rule is the scriptural one: "Speak evil of no man." There may be rare exceptions, where the special good or happiness of the one to whom we speak demands the truth, but there is little need of our emphasizing these, for they are sure to be magnified. Speech on these subjects is generally unkind and ungenerous; silence beneficial and healing. If you would widen the breach between you and a neighbor or friend, speak of your grievances to others; if you would make reconciliation impossible, retail your trouble to every one who will listen; even with a rival who has done you severe injury, if you will build him up, and prejudice yourself in the eyes of your best patrons, speak ill of him.

There are voluble men ever prying into the troubles of others, thinking to give advice; but unasked advice is generally worthless, repulsive, mischievous. Such persons probe into your feelings, and show by their wordy curiosity how little they respect rightful privacy. They do it in good will, but there is language more potent than words, a demeanor more valued, a sympathy more expressive.

As dentists, some of us would learn much to our credit if we remembered "familiarity breeds contempt." Our patients do not come to us to be made intimates of. Especially ladies resent in their feelings the least freedom of manner or conversation which, we ought to know, is unbecoming. Equally offensive is it for us to interfere with their private affairs or troubles. Though we may know of the errors, or the disappointments, or the losses and embarrassments of our patients, it is generally much better to maintain a dignified silence on them. Barbers are noted for knowing everything about their customers; some dentists do not rise above their level. Silence is golden.

In our own character, it is not well to speak often of our frailties or our virtues, of our past faults or of our future determinations, of our fears or our aspirations. There are occasions when all these are bettered by speaking of them to our friends, or even by taking a public stand, and feeling we have now committed ourselves to better ways.

And yet by keeping before our view, and the view of others, evils we would repress, sometimes keeps up a morbid appetite for them, and by making frequent promises to pursue a virtuous course do not always help us in the estimation of our fellows. "Deeds not words" is the great talismanic test of goodness.

To talk about failings or appetites, to parade indulgence or self-denials, is to give them a prominence not their due, makes it the harder to suppress them, and exhibits us to a disadvantage before our friends. Our improvement can be best performed and honored, not by making it a theme for familiar loquacity, but by committing it to the privacy of secret thoughts, resolutions, and aims. It is, indeed, chiefly by nourishing the higher nature that the lower is kept in controlled and orderly operation. The more fully men are engrossed in what is true and pure, and worthy of all their powers and intelligence, the more naturally and easily will appetite, passion, and desire assume a proper subservience, and fulfil their assigned functions quietly and legitimately. When they are forced to the front, brought up for constant review, and made the theme of much conversation and discussion, of alternate approval and censure, they occupy the place of other and weightier things, and lose their harmonious relations. As there are some plants that flourish best in the shade, so there are some duties which are best performed in the quiet of silence, some subjects on which words are an impertinence, some thoughts and feelings which will not bear utterance.

ITALICISED WORDS.

The sub-editor of the *Dental Register*, E. G. Betty, D.D.S., says:

"A too liberal use of italics is an insult to the intelligence of the reader. A correspondent has a two-page article in the September number of the *Items of Interest* in which there are no less than forty-two italicised words. Whether this is the fault of the writer or the editor, we do not know, but, at least, it displays a lack of confidence in the reader, to say nothing of the fact that such means are frequently employed to give prominence to certain parts so that the reader will not notice the dearth of the ideas."

If our friend had looked on pages 506 and 507 of the ITEMS he would have found two-thirds as many italicised words in one of our editorials; and if he had turned back in his own journal he would have found sixty-two italicised words on a half page. But neither of these facts, taken without reference to the purpose for which the words were italicised, are necessarily proofs of "A too liberal use of italics" which our learned and polite contemporary says "is an insult to the reader."

Dr. Haskell, the writer criticised, is one of the most terse, useful, and practical contributors to our dental journals, whose articles are the most quoted, and we believe the most generally read and heeded. For such a man to be a little emphatic is excusable.

SUPERFICIAL CARIES.

What is thought in regard to *removal* of "superficial caries" in teeth proportionately liable to become carious?

Ans. Superficial caries is that stage of decay which permits of its easy removal by files, burs, corundum-wheels, and the like. In teeth *liable* to become carious, it should be let alone till its progress indicates intervention by filling.—*Quiz Questions* by PROF. FLAGG.

Is not this questionable advice? It was *our* custom, especially for the last fifteen years of our practice, to anticipate, that is, where we found "superficial caries," to remove it by "files, burs, corundum-wheels" or sharp excavators, and to *polish* the surface. When Dr. Bonwill brought to the notice of the profession his practice of removing such superficial decay on proximal surfaces of teeth by a three-sided pyramid drill in a right angle attachment to our engine, we not only removed the caries, but, as he recommended, we made such V-shaped separation from the *inside* of the teeth as to prevent its recurrence. The apex of the V of course was made toward the cutting edge of the tooth, and the whole work hidden from outside view. In this way we saved many hundreds of teeth from further decay, which, by the "let alone" policy, in the course of six months or a year, would have required filling—and by our treatment we left them in much better condition than the best filling would have done if "left alone till its progress indicated intervention by filling." It is true "our bill" was not so large, but the gratitude of our patients was much greater, and that gratitude was shown by increased patronage. An ounce of prevention is better than a pound of cure.

Therefore we think we could improve on the Professor's next question and answer:

"What is simple caries?"

"*Ans.* That stage of decay wherein filling *first* becomes a necessity."

"Simple caries" may occur before "filling becomes a necessity," and if found should be removed. We have often, even if there was a cavity—if it was shallow—removed the decay and polished the saucer-like cavity, and left it without a filling.

To extirpate the pulp of a root, when it is desirable to put an artificial tooth on it, the best method is to drive into the pulp chamber a pointed stick by a slight blow. Of course, the act and the result are instantaneous. The pain is slight. Neither abscess nor any other trouble is likely to follow, as by the ordinary processes.

Eye Teeth.—Professor at Columbia: "One can not taste in the dark. Nature intends us to see our food." Student: "How about a blind man's dinner?" Professor: "Nature has provided him with eye teeth, sir."

STEADY PLODDING WINS.

We are inclined to predict for the young genius greater glory than we think is possible for the youth who has to learn everything by the hardest labor. If each struggles equally with the problems of life, the former will have an advantage; but generally what his fellow of slow perception and bungling fingers has to learn with difficulty, the ingenious youth does easily and with little ambition to do more. The dull boy therefore has the advantage of the struggle. Necessities and struggles and almost superhuman efforts are what develops and gives success. Therefore few boys of genius become great men, while many boys who are great boobies all through their teens, and perhaps for many years afterward, finally lead the world. They have had no wonderful memories to retain the wisdom of others, they have to manufacture wisdom by digesting knowledge; they have no inspiration to divine the eternal fitness of things; they have to produce harmony by floundering through chaos up to it; they have no talismanic hand to construct castles from their imagination and ability to live in them by their wits, they have to build by solid labor, and then be content with a simple house, and to live in it only by continued and painstaking gathering. The castle may blow away, the well built house never; the living of the genius may be short, the gatherings of the plodder are imperishable; the wisdom of the genius may be but theories, the knowledge of the plodder is practical.

We are enamored with the brilliant achievements of the genius, but when we come to compare final results, our greatest admiration and our deepest sympathies are with the indomitable plodder. The man of genius, with one grand bound, may outstrip all competition for a time, but generally it is the steady, persevering plodder who wins the race.

Therefore let us not be discouraged, though we are not a genius. If we have a healthy mind in a healthy body, let us be thankful. Though one is dull and the other homely, let us plod on. If every day's lessons are mastered, if every day's difficulties are overcome, if every day's blunderings are atoned for by final good work, never mind the hardness of the lessons, the severity of the difficulties, and the mortification of the blunderings, we shall as surely succeed as we persevere.

Sometimes we put to the credit of genius what should be placed to the account of blundering, stumbling, laborious plodding. How often we speak of a successful man as a brilliant genius, when, if we were acquainted with his secret history, we should know him only as a patient plodder. And there are awkward men—"rough hewn" and "green"—who are geniuses in disguise. Their uncouth exterior deceives us; but some day they flash out, enlightening the world.

THE INTRIGUE OF SECRECY.

There are men in all classes and professions who glory in intrigues. They are the wirepullers in our conventions and all manner of associations. Before even they are seen and felt in public places they are laying their plans with a few to accomplish something they believe—and others believe too—would be impossible without the assistance of these private conclaves—some secret plotting—by which the few are sometimes able to inveigle the many, and lead them to do unwittingly what afterward they regret.

Great men are unsuspicious. They walk with stately mien among their fellows not thinking of the traps laid by small minds. They often receive into their broad arms as a friend, one who designs their injury, and entrust themselves to men who repay their confidence with destruction.

This does show the smartness of intriguers, if the cunning of the snake is smartness, and if success is necessarily smartness; for they are often as successful as the viper that stings you to the death.

I like the open face that shows the workings of honest thoughts, the intents of a pure heart, and the inspirations of a lofty soul; but I despise the stealthy wormings of a sinister mind intent on circumvention, an evil heart all covered with the mystery of plot, and a groveling soul enshrouded in mask, like the apparitions of a ghost. Ah, yes; I like to see passion so pure, affection so exalted, and sympathy so genuine that they can be seen glowing on the countenance, and an intellect so stately and noble that its very smiles lift us to a higher level; but what shall we say of a man whose low passions burn with selfishness, whose affection is the charm of the serpent, and whose ambition is to rob you of your dignity, and make you his willing tool?

Quiz Questions is a course of questions on pathology and therapeutics supposed to be asked by Prof. J. Foster Flagg, of the Philadelphia Dental College, and answered by Wm. C. Faults, D.D.S. As an epitome of Prof. Flagg's instructions it is well calculated to assist the memory of those attending his lectures. Published by S. S. White Dental Manufacturing Company.

As Prof. Flagg does not quite agree with any one else, of course no one else quite agrees with him. He is a "New Departure," pronounced and dogmatic. Yet in his originality he gives evidence of thought and labor, and in his teachings he brings the convictions of a long and successful practice. Singularly enough, though he is so unique as a character, so ultra as a teacher, and so extreme as a practitioner, nearly all our differences with him in his teachings of this book, would be where we should also differ from "our standard au-

thorities." Even with the distinctions he makes between his "New Departure" and the common practice, which he so thoroughly champions and is considered the leader, we have not much complaint, except that it is no new departure : "What is meant by 'thoroughness,' as understood from the 'New Departure' standpoint?" he asks ; and then answers : "Thoroughness means *tooth saving*, exemption from pain, not 'inflections ;' *gentle* yet *thorough* impact, not 'forcible conformity ;' *harmony*, not golden jarring; resistance proportioned to demand ; 'perfect adaptation' to the *requirements of the case* whether 'tightness' or *looseness* ; *comfortable service* rather than 'elegance of finish.' "

At a future time we may take up some points where we differ from the teachings of this book, and yet we wish it to be understood that it is a valuable epitome of instruction on pathology and therapeutics. Who is so perfect he does not err in some things?

DON'T SMOKE.

You can give no good excuse for the practice, but there are many excellent reasons for abandoning it. It neither strengthens the body, brightens the intellect, nor elevates the moral nature. It adds no quality of goodness, no grace of manners, and no refinement of spirit. It pleases no friend, wins no advantage, and gives no reward.

It is a bad habit every way, every where, and from beginning to end. Do you say you smoke so "moderately" you have formed no *habit*? Be thankful, and stop before you have. If you find the effort difficult, be assured it has already begotten an artificial appetite, lowered the general tone, and woven round you coils of cruelty. Break them before they become stronger. Abandon the evil entirely, and then you will agree with us that it is an evil.

It causes great waste of time, money, and energy. It beclouds the intellect, blunts the sensibilities, and tends to selfishness ; it mars those pure, delicate, heaven-born instincts which grace the highest refinement, and it handicaps those decisive, inspired, bounding desires which so spontaneously spring from an untrammelled manhood. It stimulates, but only to depress ; it brightens, but only with a lurid flame to deceive ; it gives precosity, but only to bring on premature old age.

Yet smokers are tolerated in the best society ; yes, in spite of this pernicious habit, many of them are a part of good society ; that is, if they are men ; of course, if they are women, they cannot expect "recognition." We men have a monopoly of some things—some things we should be ashamed to see women do. But its *tendency* is to lower the standard and the standing of any one. Among smokers we have men of noble aspirations and magnanimous purposes, but the

tendency of smoking is to check them. Great deeds and herculean labors are performed by men who are almost continually burning incense to this filthy god, but it *tends* to indifference and enervation. If it does not *cause* mediocrity, it gives contentment in it; if it does not *create* indolence, it nurses it; if it does not *produce* weakness, it makes weakness an excuse for its continuance.

Though the evil of this habit be unconfessed, it is a check on the full range of conscience; though its real character may not have received serious attention, there is an instinctive conviction that it is a weight; and though when reasoned on, the judgment may settle it as a proper thing to do, there is a secret monitor within warning against it, till at last its delicate monitions are smothered in smoke.

Yes, we are obliged to acknowledge that many good, useful, and intelligent men smoke. (Thank God we have not to include the ladies.) Some of them smoke openly, a few boastfully, but none wisely. Nearly all acknowledge the habit a weakness they are ashamed of, and unworthy of imitation by their wives and children. In spite of all excuses, the minister with a cigar, the professional man with a pipe, or the leader in any great and good work, puffing tobacco smoke, looks—well, perhaps we can not say just how it does look—but surely it looks out of place. In any man, we have special respect for, we hold such a habit a blemish; and though we do not like to *say* as much, we *think* it a shame, and wish he thought so too. Even you, though you smoke yourself, would a little rather not see these people come down to it. You can hardly think of any one (but yourself) who would not look better, and be better, without the habit.

It makes lounging places more attractive, saloons more tolerable, and rough associates more agreeable. It may make you more free-hearted—in dissipation—but does it not tend to penuriousness where expenditures are legitimate and necessary? It may make you benevolent to a fault—to yourself and to your chums—but does it not tend to make you selfish where benevolence would be a virtue? It may call out your sympathies with the weak and erring—because you are one of them—but does it not hinder your engaging in many good things to make you and the world better? Suppose it is a comfort to you, is it not an inconvenience to others? Suppose it does help while away a leisure hour, does it not hinder self-improvement? Suppose it is a solace in loneliness, does it not tend to separate you from your family and friends? You know its comfort is only that transient, isolating, selfish indulgence, which makes you oblivious to the pleasures and rights of those about you. You know, though it may be your companion in light reading and superficial thinking, when you come down to hard study you throw away the cigar. You know the smoke room is a nuisance and that to bring your smoke into the family is a greater nuisance.

To have a genial companion to smoke with you, do you choose your wife? To invite a chum into your smoke room, do you call your son? Does it enhance your pleasure to see either imitate your example?

Without question, this smoking habit injures the body; the nerves are unstrung, the muscles are weakened, and the general tone is lowered. It is an irritating narcotic poison, impairing every tissue, deranging every organ, showing its injuries most in the weakest parts. It injures the temper, ruffles the spirits, and deranges the passions. It produces in the system an abnormal condition,—blunting the taste, weakening the powers, and vitiating the appetite. In sickness it often complicates disease, and thwarts the effects of the best medicine.

Tobacco is a twin brother to intoxicating drink—the greatest curse affecting man. Be thankful the narcotic stimulus of tobacco has not lured you on to drink—the destruction of so many once as strong willed as you. This snare, tobacco is preparing you for, you *may* escape but millions every year do not. What surety have you that you will escape? This dark, fearful doom is before you!

We beseech you, therefore, if you have not taken the first step, don't; if you have, stop! Turn back from a path which so surely leads you in the wrong direction. You will never regret your departure from such a vice; and the longer you are free from it, the higher you will estimate the blessing of your freedom. It is an evil in itself, and evil in its tendency; it is an evil now, and an increasing evil in its continuance; it is an evil to you, and an evil to your best friends; it is an evil to your morals, and an evil to your business. Unless you prize the increasing cravings it produces—so unnatural and destructive—it is an evil without compensation; and unless you make the weakness it brings to your nerves and to your will an excuse for its continuance, it is without excuse. Be assured your time can be better employed, your money better spent, and your energies put to better purposes.

To break loose will be a struggle, but be determined it shall be a victory. Though its virus has enfeebled the faculties, weakened the will, and bound the whole man, strength will come with decision, a bounding joy with victory, and regeneration with patient continuance in well doing.

The California Dental College.—We are glad to hear that this college is growing in importance, patronage, and general support by the profession of that State. There is certainly need for a dental college on the Pacific slope, and it is fortunate that this college is creditably supplying that need.

Miscellaneous.

PUMP-WELLS AND IMPURE WATER.

The apprehension of an outbreak of epidemic disease during the summer has had the effect of directing attention prominently to the great risk incurred by the use, for domestic purposes, of water contaminated by putrescent organic matter discharged into the soil from numerous sources always existing in inhabited places, and already, in a number of localities, measures have been adopted for averting this cause of danger to the public health. Of the 300 pump-wells existing in Brooklyn in 1882, less than 100 remain, and as most of these have been condemned by the Department of Health as furnishing water which is unfit for human consumption, they will doubtless be soon abandoned. In St. Louis, the pollution, by the drainage from the numerous cesspits which still remain in that city, of well water used for domestic purposes has excited public alarm, and measures are being discussed for the remedy of the evil.

Col. Ludlow, the Chief Engineer of the Water Department of Philadelphia, has furnished the Board of Health with a list of 1000 pump-wells and other local sources of supply in the city, which, from their surroundings, are deemed incapable of furnishing pure water. A large number of these wells have already been condemned and ordered to be abandoned, and, in all probability, similar action will be taken with regard to most of those yet to be examined. By far the greatest number of wells are located in the suburban wards, though in thickly populated localities; scarcely any of them are to be found in the old city proper. Originally they were depended on as the only source of supply; but notwithstanding the city water is now, in most cases, available, the people still prefer to use the well-water on account of its clearness, coolness, and palatability, qualities which cannot be regarded as a test of the wholesomeness of a water.

It is a well-known fact that the ground-water underlying an inhabited district is almost invariably polluted. Leaking cesspools and privy-wells, leaking sewers and drains, stable yards, grave-yards, and soakage from defiled surfaces, all contribute to its contamination. The domestic use of water derived from the drainage of a soil saturated with foul organic matter, particularly that of fecal origin, is known to be a frequent means of communicating disease, and the disgusting practice should be exposed, condemned, and prohibited wherever practicable.

The custom of disposing of sewage and of providing for a water supply on the same premises is more common in towns and villages than in cities, and not infrequently local outbreaks of disease, such, for example, as typhoid fever, have been traced to this fault. The devastating epidemic of typhoid fever lately prevailing in the mining town of Plymouth, Pa., is attributed to the use of water contaminated by typhoid excretions. Cholera may be propagated by this same filthy mode of infection. The active measures in sanitation which are pressed at the present time throughout the country should embrace, as a leading feature, the investigation of a water supply in every case in which there is a suspicion of its pollution. It should be borne in mind

that the ground-water, by which shallow wells are fed, is almost invariably polluted in inhabited places, and that no precautions that may be taken in sinking wells can be depended on as securing a safe supply.—*The Medical News.*

A VALUABLE REMEDY FOR HEADACHE.

The *Physicians' and Surgeons' Investigator* desires to call attention to a simple, and at the same time wonderfully efficient, treatment for many kinds of headache.

"We lay no claims to originality, nor do we know who the originator was, but having used it for a year or more, and in many cases with remarkable results, we feel disposed to give it our indorsement, and desire to make it more generally known. The remedy is nothing more nor less than a solution of the bi-sulphide of carbon. A wide-mouth, glass-stoppered bottle is half-filled wth cotton or fine sponge, and on this two or three drams of the solution are poured. When occasion for its use occurs, the mouth of the bottle is to be applied to the temple, or as near as possible to the seat of pain, so closely that none of the volatile vapor may escape, and retained there four or five minutes, or longer. For a minute or so nothing is felt, then comes a sense of tingling, which in a few minutes—three or four usually—becomes rather severe, but which subsides immediately if the bottle be removed, and any redness of the skin that may occur will also quickly subside. It may be re-applied, if necessary, several times in the day, and it generally acts like magic, giving immediate relief.

We believe this was the basis of a once popular nostrum. The class of headache to which it seems especially adapted is that which may be grouped under the broad term of "nervous." Thus neuralgic, periodic, and hysterical headaches are almost invariably relieved by it. True, the relief of a mere symptom is quite another thing from the removal of its cause, yet no one who has seen the distress and even agony caused by severe and frequently recurring headaches (and who has not?) but will rejoice to be able to afford relief in so prompt and simple a manner; besides, it is sure to secure the hearty gratitude of the patient, if he has suffered long. As to the modus operandi, we have nothing more definite than a theory to offer, and that is the vapor being absorbed through the skin, produces a sedative effect on the superficial nerves of the part to which it is applied. We know by experiment that its influence is not due to its power as a counter-irritant. We however know that it does act, and if we do not see clearly in what way it acts, that is no more than can be said of several other remedies which are firmly established in professional favor and confidence."—*Weekly Medical Review.*

Antiseptic Wash for the Hands.—Dr. Förster, of Amsterdam (in the *Centralblatt für klinische Med.*), after a series of careful experiments decides that a solution of corrosive sublimate of 1 to 2000 forms a reliable antiseptic wash and urges its adoption by physicians and surgeons.—*N. Y. Med. Journal.*

Keep well abreast the most advanced thoughts of your profession.

CEMENTS FOR RUBBER.

1. Powdered shellac is softened in ten times its weight of strong aqua ammonia, whereby a transparent mass is obtained, which becomes fluid, after keeping some little time, without the use of hot water. In three or four weeks the mixture is perfectly liquid; and when applied, it will be found to soften the rubber. As soon as the ammonia evaporates, the rubber hardens again (it is said quite firmly), and thus becomes impervious both to gas and to liquids. For cementing sheet-rubber, or rubber material in any shape, to metal, glass, and other smooth surfaces, the cement is highly recommended.

2. Dissolve ten parts of rubber, in small pieces, in two hundred and eighty parts of chloroform, by maceration; melt ten parts more of finely cut rubber with four parts of rosin, add one part of turpentine; then mix the two solutions. For use, dip a piece of linen in the cement, and apply it to the torn article or rubber, which should also receive a layer of the cement before and after the application of the linen. .

THE NEXT FUEL SUPPLY.

The word is passed around that it will be natural gas. There is a general doubt, however, whether there is enough of it. At Pittsburg and through Western Pennsylvania, for example, the supply is enormous, but it is feared it will not hold out long. There are some good reasons for believing the supply is inexhaustible. In the first place, natural gas has been known ever since men on earth have known anything. In the second place, its otherwise, petroleum, is, after twenty-five years of pumping out of the bowels of western Pennsylvania, more abundant than ever. If particular wells cease to yield largely, other wells take up the task of inundating the market with oil. Natural gas jets are now burning in the Caucasus which are believed to have been lit soon after Noah descended from the ark. Others say those flames were lit when the Caucasus range was lifted from the sea. The lowest estimate is 4,000 years; the highest, 4,000,000 years! Natural gas has long been known in many parts of the globe. That there are interior oceans of gas and oil is at least possible. One of our theories is that anthracite coal has had its original gas blown off and collected in vast reservoirs. In this case it is probable that we have as yet tapped only some distant branches of the gas oceans. At least, this is certain; if natural gas has burned not less than 4,000 years in the Caucasus, it will probably last till the next great motor and light are invented. Its use is an enormous saving, even in Pittsburg, with coal at the door cheap and abundant. Elsewhere the new fuel may be a worker of industrial miracles—say on the shores of Hudson's Bay or even in northern Dakota! Better bore for gas than dig for gold in the great North-west.

Fixing Pencil-Marks.—Probably the best and most convenient way of fixing pencil-marks is to immerse the paper containing the marking to be preserved in a bath of clear water; then flow or immerse in milk a moment, and hang up to dry. This treatment will preserve both the ordinary pencil-marks and crayon drawings.